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Bożeny SKOTNICKIEJ-ZASADZIEŃ
Marty MŁOKOSIEWICZ
Radosława WOLNIAKA

Edited by
Bożena SKOTNICKA-ZASADZIEŃ
Marta MŁOKOSIEWICZ
Radosław WOLNIAK

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REDAKTOR NACZELNY – Dr hab. inż. Małgorzata KRÓL, prof. PŚ
REDAKTOR DZIAŁU – Prof. dr hab. inż. Radosław WOLNIAK

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WYDAWNICTWO POLITECHNIKI ŚLĄSKIEJ
ul. Akademicka 5, 44-100 Gliwice
tel. (32) 237-13-81, faks (32) 237-15-02
www.wydawnictwopolitechniki.pl

Sprzedaż i Marketing
tel. (32) 237-18-48
wydawnictwo_mark@polsl.pl

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FOREWORD

Presented number of Silesian University of Technology. Scientific Papers. Organization and Management Series. Presented papers contain result of researches conducted by various universities. The number consists of 38 papers.

The papers presented in the number concentrate on many topics connected with organization and management. There are in the number papers about: human resource management; communication; entrepreneurship; ergonomic; innovation management; lean management; energy transition; human capital; Corporate Social responsibility; artificial intelligence implementation in management; Industry 5.0; project management; healthcare management and marketing.

Bożena Skotnicka-Zasadzień
Marta Młokosiewicz
Radosław Wolniak

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RELATIONAL AND ORGANIZATIONAL DETERMINANTS OF THE YOUNG EMPLOYEES' EFFECTIVENESS OF REMOTE WORK

Anna ALBRYCHIEWICZ-SŁOCIŃSKA

Częstochowa University of Technology; a.albrychiewicz-slocinska@pcz.pl, ORCID: 0000-0002-7245-4461

Purpose: The aim of this study is to present the results of a multi-faceted analysis of the factors determining the attitudes of Generation Z employees towards remote work.
Design/methodology/approach: The study focused on Generation Z representatives with a remote working experience. It analysed areas of remote working such as knowledge sharing/learning, communication, work organisation, WLB, motivation and employee relations. In the first phase of data analysis, the adopted measurement model was diagnosed using structural modelling (SEM), in the second phase an exploratory factor analysis was carried out, which resulted in a new latent factor structure. The obtained model was then assessed for relevance and the relationships present between the latent variables were determined.
Findings: The exploratory factor analysis led to the definition of a structure of indicators comprising 4 factors interpreted as: relational-organizational learning (ROL), organizational and performance aspects of work (OEW), employee comfort (EC) and formal communication (FC). Based on the diagnosed factors, a theoretical model was built assuming the mutual relations between the factors and their impact on the preferred form of work in the future. This model showed acceptable measures of the goodness of the model fitting into the empirical data. In addition, this model revealed a strong influence of ROL and OEW, as well as a relationship between OEW and EC. It is also worth noting that the ROU correlates statistically significantly with preferences in terms of the form of work in the future.
Research limitations/implications: Repeating the research, on a larger group of respondents, taking into account other age categories and using the method of confirmatory factor analysis, would bring an interesting voice to the discussion on the presented research results.
Practical implications: The results of the research indicate a somewhat non-stereotypical approach of Generation Z employees to the issue of awareness in the field of shaping employee relations, while revealing competence deficiencies in this area.
Originality/value: The findings of the study bring a new voice to the discussion about the factors shaping attitude of Gen Z to the remote work. In the literature the analysis of such a components was not discovered.
Keywords: organisational learning, WLB, remote work, Generation Z, SEM.
Category of the paper: Research paper.

1. Introduction

Remote working as a form of work has functioned on the Polish labour market for many years (Chomątowska, Chłopek, 2011), however, it has generally been assigned to specialist positions and was treated as a kind of prestigious benefit. The extent of the use of remote working was drastically altered by the COVID-19 pandemic, as a result of which employees who, because of the type of their tasks, were able to perform their work remotely, were shifted en masse to provide work off-site (PARP, 2022). An analysis of the literature points to the pandemic as a turning point in analysing the advantages and disadvantages of remote working. While prior to the pandemic, publications were mainly positive, highlighting the advantages of remote working from the perspective of both the employee and the employer, after the pandemic there was a veritable flood of research-based publications highlighting the many problems and challenges this form of working revealed. It should be noted, however, that the pre-pandemic reality favoured employees carrying out tasks remotely as majority of them carried out their duties in stationary form anyway, safeguarding the day-to-day running of the organisation. At the same time, many employers who are reluctant to use this form of work cited problems with the technical side of organising work and the challenges related to legal issues concerning the performance of remote work, from security, control and communication to aspects ensuring digital security as the main obstacles to widening the scope of remote work (Wąsik, 2020). During the pandemic, when employees switched to remote working out of necessity, it became apparent that the aforementioned obstacles could be easily removed, but other aspects such as issues of sustaining employee motivation and loyalty, organising and managing the work delivery process, or building employee relationships came to the fore (Marciniak, 2023). However, it should be emphasised that pandemic influenced both employees and employers who changed their general attitude towards remote working to a more positive one (PARP, 2022) albeit said attitude was also made more realistic by the real problems that are associated with this mode of work.

In addition to analyses related to remote working, labour market and HR researchers also focused on the young workers who are entering the labour market and who appear to be best prepared to provide work in this mode. On the other hand, it is difficult to find publications linking these two areas in the literature. The aim of this study is to analyse the key factors influencing work mode preferences for this particular group. This analysis was carried out using a structural equation model based on the results of a study carried out in December 2022 by a research team of staff from the Faculty of Management at Częstochowa University of Technology.

2. Remote working – challenges and problems

In order to present the theoretical background on the issue of remote working, the author decided to start by addressing the discussions that are still present in publications on how the different generations function in the workplace, which is the context for the analysis of the research results. Critical statements can be found in the literature regarding the validity and correctness of grouping employees according to age categories, also questioning the very definition of the term 'generation' (Urick et al., 2017, Guillen, 2025) although, on the other hand, we encounter various classifications of generational divisions based largely on year of birth (Bencsik et al. 2016). What stands out in this discussion is the work of Wiktorowicz et al. (2016), which objectively presents a sociological, psychological, anthropological and even cultural understanding of the term generation. This publication takes as its definitive approach the view that generation is not only a category determined by date of birth, but also by a community of experiences shaped by a particular society at a particular time (Sobierajski, Kuszewska, 2023). At the same time, the author recognises that it is extremely difficult to carry out quantitative social research in a population defined by a perceived identity bond with specific macro-experiences. For the purposes of the research, it was therefore taken the view that the division of generations presented in the literature, taking birthdays as the determinants of generation, would be the most appropriate for the purposes of carrying out the survey. The most popular division in the literature assumes that generation Z, which is the subject of the research, in relation to Poland, includes people born after 1995, although researchers sometimes include those born in 1990 among its representatives (Wiktorowicz et al., 2016). In the literature, we also find approaches that include in the Generation Z those who were born in 2000 and later (Dreyer, Stojanová, 2022). Works describing the characteristics of this generation emphasise attachment, or even a dependence of its representatives on modern information technologies and the tools used to operate them. For Gen Z, smartphones and iphones are essential communication tools far more important than face-to-face or telephone communication (Astorquiza-Bustos, Quintero-Peña, 2023; Bamieh, Ziegler, 2022). It would seem, therefore, that remote working as an IT-based form of working would be their preferred form of work. And indeed, during the years of the pandemic and in the short period after its cessation the research has shown that remote working was not only conducive to the satisfaction of young workers, but was also characterised by greater efficiency (Emanuel, Harrington, 2020) and increased employee well-being (Charalampous, 2020). Research by Emanuel and Harrington (2023b), even indicated that for many young people, remote work is so attractive and desirable that they are prepared to give up part of their salary so that they can do their work at a time and place that is convenient for them.

Remote working is therefore somewhat a matter of choice and negotiation between the aforementioned parties to the employment contract, and has both potentially positive and negative consequences for both parties. The perspective adopted in the study focuses on the consequences remote work has for the employee, not including aspects such as the impact of remote working on the employee's family environment, the shaping of the labour market, technical aspects of work organisation or issues of remuneration for remote workers.

According to the literature, the most important advantages of remote working are considered to be that it influences the following (Marciniak, 2023, Jeran, 2016; Dolot, 2023):

a) improved job satisfaction,
b) strengthened motivation to work,
c) increase of the employee's commitment and, as a result, loyalty to the employer,
d) better work-life balance,
e) flexible management of work processes,
f) independence, autonomy in work.

However, it should be remembered that in addition to the positive aspects, remote working can also have a negative impact on productivity (Bartel et al., 2012; Makowiec, Mikula, 2014; Jeran, 2016; Kawa, Grewinski, 2021; Tomaszuk, Wasiluk, 2023; Yarbrough, Ramos Salazar, 2023,):

a) disrupting the flow of information/knowledge between employees and supervisor and employees,
b) information overload or chaos,
c) dependency of the employee's efficiency on the technical ICT solutions,
d) impairment of the employee's well-being,
e) the distortion of labour relations,
f) diminished opportunities for promotion or the development of competences necessary to maintain or increase the market value of an employee,
g) deprivation of direct use of the organisation's resources,
h) a decrease in commitment and trust among employees.

In particular, informal relationships with colleagues and superiors, which are one of the most important sources of building an individual's relationship capital (Jeran, 2016) and influence feelings of job satisfaction, come to the fore. Working away from the employer's premises does not allow the employee to benefit from the spontaneous interactions that not only build emotional bonds between employees, but also facilitate the natural flows of knowledge, experience and information, thus creating organisational knowledge capital and organisational learning processes. Limiting communication to verbal, written and formal communication impoverishes the entire sphere of social interaction (Sikora, 2012) and leads to a sense of social (but also professional) isolation (Makowiec, Bober, 2008; Makowiec, Mikuła, 2014; Wyrzykowska, 2014). The flow of feedback on performed tasks also takes on a formalised character. Of course, it is important to bear in mind that from the employee's perspective,

a constant contact with the employer is, in a relational sense, a mean of a reciprocal relationship, but also carries a risk of eliciting a sense of being controlled constantly rather than a sense of belonging (Jeran, 2016). In contrast, flexible organisation of one's working process remotely, although potentially conducive to a greater sense of control over the work itself, also involves the need to be able to plan and organise one's own work, readiness to solve problems independently and being self-motivated and self-disciplined.

Another analytical layer regarding remote working is also the fact that this work is no longer associated only with specialised, complex, highly skilled jobs. Currently, the labour market also features positions that are low-quality, low-prestige jobs that are remunerated on a hourly basis and are also highly taxing (Wyrzykowska, 2014). These are rarely taken into account when discussing the advantages and disadvantages of remote working, but it should be noted that for Generation Z young workers, who might lack specific skills, these are often their first experiences with remote working.

3. Methodology

The survey carried out included 387 questionnaires in accordance with the survey indicators set for the representativeness of the population surveyed. Based on the Labour Statistical Yearbook 2021, the size of the working population in Poland in the age bracket covered by the study (born after 1995) was 4 802 000 people. The division into age subcategories results from the categorisation adopted by the Statistics Poland. For the population thus estimated and the following statistical assumptions: fraction size: 0.5; confidence level: 95%; maximum error: 5%, the research sample size was set at 384 people (redundant questionnaires do not disturb the planned structure of the research group). The survey was carried out by the market research agency Fieldstat sp. z o.o. using quantitative research methods that utilize the Computer Assisted Telephone Interview technique, applied to 50% of respondnets and Computer-Assisted Web Interview applied to the remaining 50% of respondnets.

The questionnaire design was based on an analysis of the determinants of remote working, within which a list of 57 primary indicators was constructed in the form of statements using a five-point Likert scale. The literature review found that most of the factors influencing the topic under consideration by the researchers are scattered, diverse and lack systematisation. Few researchers also consider the relationship and mechanism of action between these factors. The form of the indicators adopted was therefore the result of the outcome of research that a research team made up of employees from the Faculty of Management at Częstochowa University of Technology carried out in 2021/2022.

Adopted statistical approach involves testing the validity of the model built on the basis of causal relationships between latent indicators revealed by exploratory factor analysis. Structural equation modelling (SEM) is one of the most popular statistical methods used for quantitative analysis of the data concerning the behavior or consumers or employees (Kacprzak, 2018).

4. Research results

The starting point for conducting a factor analysis is the examination of the adequacy of the correlation matrix, which is assessed using the Kaiser-Meyer-Olkin (KMO) index. It is a measure of the appropriateness of the choice of variables (Kaiser, 1974). This factor compares the magnitudes of the observed correlation coefficients with the magnitudes of the partial correlation coefficients. The results of the KMO test and the Bartlett test for the dataset studied are shown in Table 1.

Table 1.
KMO test and Bartlet test

KMO	0.968
Bartlett's test of Chi^2 sphericity	20930.68
df	1485
significance	0.0000
Cronbach alpha	**0.970**

Source: own work.

The value of Cronbach's alpha coefficient for the 57 questionnaire items is 0.970 with recommended value being higher than 0.7 (Pietrzak, Żurek, 2012). Both reliability statistics show high values and allow us to conclude that the adopted research tool does indeed measure the same phenomenon, thus allowing an exploratory factor analysis (EFA) to be carried out.

A principal component analysis using Promax rotation revealed four main factors explaining nearly 65% of the variance. The Promax rotation was chosen as a non-orthogonal rotation, which allows for natural relationships between factors that may exist in the data or arise from theory.

The Cronbach's alpha reliability statistic reaches a value above 0.7 for each of the latent variables considered in the article and therefore it can be assumed that the sets of observable variables measure the same phenomenon.

Table 2.
Specification of the factors

Factors	Cronbach Alpha
F1 **relational-organisational learning (ROL)**	0.973
F2 **organisational and efficiential aspects of work (OEW)**	0.968
F3 **employee comfort (EC)**	0.914
F4 **formal communication (FC)**	0.820

Source: own study.

Analysing the individual factors substantively, it can be assumed that the first factor (ROL) relates to organisational knowledge exchange processes, with the variables most strongly loading this factor being those relating to employee relations and knowledge flows between employees, with the average responses of respondents indicating that remote working does not meet their expectations in this respect. The second factor (OEW) combines aspects of knowledge and information exchange with issues of motivation in the context of efficiency and the technical dimensions of remote working. The next factor (EC) focuses on the elements of WLB while emphasising the dimension of employee well-being and comfort. The last factor (FC) focuses on formal communication related to task performance.

The analysis of the relationship between the factors led to the construction of a model to determine the impact of the factors analysed on the preference for the form of work in the future (PFW) that respondents were asked about (Figure 1).

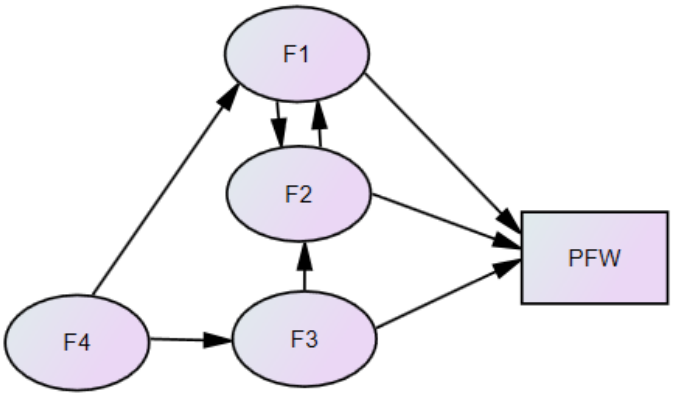

Figure 1. A model of the relationship between factors.

Source: own study.

The basis for assessing the admissibility of a theoretical model, which hypothesises the directions and significant strength of the relationship between variables, is the positive result of a procedure carried out to verify the research hypothesis on the admissibility of the model and the estimation of the unknown parameters of the model, together with an estimate of the significance of these parameters (Januszewski, 2011, Zając-Lamparska et al., 2018, Kacprzak 2018).

As highlighted by Tarka (2017), numerous limitations of the chi-squared test statistic have led to the development of various descriptive measures of SEM model fit, among which the following emphasising measures are identified: model simplicity, the ability to compare the null model with the postulated model, and the probability of model validation in independent data samples. In doing so, it should be emphasised that even a good fit of the model based on chi-squared statistics does not yet prove its veracity, but only allows it to be not rejected.

According to Tarka (2017), the correction of such limitations can be done through the analysis of indicators belonging to the class of absolute measures. One of them is the RMSEA index (root mean square of the error of approximation) as it has a built-in correction for the SEM model complexity and thus is extremely useful during selection of the right model from various alternative versions. Moreover, it allows for a test of the more realistic hypothesis of an approximate fit of the SEM model. The value of the RMSEA can be estimated according to the formula proposed by Browne and Cudeck (1993) for a 90 per cent confidence interval for the RMSEA, which allows the level of precision of the point estimate to be determined. Thus, when interpreting an index, even if we reject the postulated model, it becomes important to know the ranges (i.e. lower and upper limits) of this rejection. Overall, a good model fit determines an RMSEA value of ≤ 0.05 although a value of 0.08 is assumed for the social sciences.

Table 3.
Goodness-of-fit tests

Test index	X2/df	GFI	AGFI	NFI	CFI	IFI	RMSEA
Recommended values	< 5	> 0.90	> 0.80	> 0.90	> 0.90	> 0.90	< 0.08
Model	3.623	0.698	0.665	0.827	0.868	0.868	0.082 LO90 = 0.079 HI90 = 0.086

Source: own study.

Taking the aforementioned considerations into account, it should be concluded that the proposed model can be considered acceptable with regard to the RMSEA and X2/df statistics, indicating a good, acceptable fit of the model to the data (Table 7). The deviation of the other statistics obtained for the model may be due to an insufficiently large test sample, given the number of observations. Also for some explicit variables, the analysis of skewness and kurtosis indicates deviations from a normal distribution.

Analysis of standardised and unstandardised estimators confirm that PFW is most influenced by F1 and F3 and this is a positive relationship, while F2 has a negative impact. It is also noteworthy that high estimates are observed for the impact of F2 on F1 and of F3 impact on F2. The F2 indicator acts as a mediator in this case and shows an indirect effect on F1.

5. Discussion of the results

Assuming that the presented model shows an acceptable fit to the actual data and that the examined relationships between the factors are statistically significant, it is possible to discuss the impact of individual factors on young people's preference for remote working. It is noteworthy that the two dominant latent factors are related to aspects of organisational learning, with the first linking the exchange of knowledge, experience and information with employee relations, while the second one makes organisational knowledge and information exchange dependent on technical issues and links them with the effectiveness of task performance. Interestingly, the model reveals that formal communication is responsible for respondents' feelings of comfort and well-being and that this, in turn, shapes organisational and performantial aspects of work. The latter factor also influences the relational dimensions of the organisational learning. This seems to be tied with the importance of the organisational learning factor, in the light of which young people understand the importance of establishing interpersonal relationships in the workplace, as these influence the learning and work motivation processes. These are crucial elements for young people who gain work experience and benefit from the experience of colleagues with more knowledge and seniority. This observation is also corroborated by the studies of Dreyer and Stojanová (2022) and Hegade and Shettar (2022), which emphasise the importance of personal contacts and face-to-face communication at work have for the associated skills (Hans et al., 2023).

The negative relationship between the organisational effectiveness factor of remote working and the preferred form of work is confirmed by the work of Emanuel and Harrington (2023b, 2023a, 2024) based on repeated studies that were more in-depth relative to the original ones, which research highlights the negative impact of remote working on employee effectiveness. These regularities were confirmed in the studies by Atkin et al. (2023) and Gibbs et al. (2022). Furthermore, it seems that, as Marciniak (2023) argues, the most important managerial aspect of remote working is to provide employees with constant and perceptible assistance in solving difficulties related to both professional tasks and employee-organisation or employee-employee relationships.

According to Jeran (2016), the relational dimension of work is tied to its performance in a team and in a strictly social context. Even the most individualised and self-performed job duties introduce an interactional and relational context both in terms of responsibilities and the work situation itself. In addition to the formalised level, the organisational structure also has an informal dimension. Staff meetings are not only work team deliberations, but also joint breaks, spontaneous short meetings in common spaces, or a shared commuting to and from work. Working remotely deprives the employee of most of these contacts, as the circumstances in which they are made are eliminated.

6. Summary

The results of the research allow us to make several conclusions. The first one concerns the awareness of the importance of inter-working relationships exhibited by the representative of Generation Z, both in terms of organisational learning and the shaping of work performance in the case of remote working. However, despite said awareness, they prefer formalised and deferred non-direct communication, which significantly affects their wellbeing and sense of comfort. It can be hypothesised here that this is related to a lack of social competence in terms of establishing and maintaining relationships. Another interesting observation is that both ROL, OPW and EC affect their preferences for the future forms of work with similar significance. From the perspective of the issue under scrutiny, it may come as some surprise that the work-life balance elements so often raised in the context of both advantages and disadvantages of remote working are not the main determinant of attitudes towards remote working. Perhaps this is a result of the personal situation of the respondents, who, as relatively young and independent, do not yet feel the problems and challenges of working, whether on-site or remotely.

Additional study covering a larger group of respondents, including other age categories and using the confirmatory factor analysis method would undoubtedly bring an interesting voice to the discussion about the presented research results.

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MANAGERIAL READINESS OF SUPERVISORS: EVIDENCE FROM EMPLOYEE ASSESSMENTS

Agnieszka BERA

WSB Merito University Wrocław; agnieszka.bera@wroclaw.merito.pl, ORCID: 0009-0008-8266-3874

Purpose: This study aims to develop and empirically validate a unidimensional index of perceived managerial readiness from the employee perspective, and to assess its temporal stability.
Design/methodology/approach: The study was conducted in two waves (2023 and 2025) using a repeated cross-sectional design. A four-item index was constructed to capture preparedness, knowledge, use of tools, and learning from mistakes. Exploratory and confirmatory factor analyses (EFA and CFA) were conducted, and the index was evaluated in terms of reliability, measurement invariance, and differences between waves.
Findings: The index demonstrated a unidimensional structure, good reliability, and measurement stability. Measurement invariance criteria were met, enabling comparisons across waves. A small but statistically significant increase in perceived managerial readiness was observed. The index did not significantly differentiate demographic subgroups, and the extended version did not alter the interpretation of the results.
Research limitations/implications: The study relies on a cross-sectional design and a single data source. The extended version was characterized by a high level of missing data. Future research should incorporate longitudinal designs, more diverse populations, and further validation of the index against established leadership measures.
Practical implications: A simple perceptual index can serve as a preliminary diagnostic tool for assessing leadership quality, enabling organizations to monitor managerial readiness from the employee perspective. The findings suggest that employees' evaluations of leadership preparedness are driven more by actual managerial behaviors than by formal participation in development programs.
Originality/value: The paper provides an empirical validation of a synthetic, single-factor index of perceived managerial readiness, offering an alternative to complex competency models and leader self-assessments.
Keywords: managerial readiness, leadership, employee perception, leadership assessment.
Category of the paper: Research paper.

1. Introduction

Contemporary organizations operate in conditions of increasing complexity, pressure for efficiency, and continuous technological and social change. In such an environment, the quality of leadership becomes particularly important, and managerial readiness emerges as a key factor determining team effectiveness. Managerial readiness extends beyond formal qualifications or participation in training programs, encompassing the ability to translate knowledge into action, adapt to changing conditions, and learn from mistakes in everyday managerial practice.

Despite growing interest in leadership readiness, the literature offers diverse and often complex approaches to its conceptualization and measurement. Existing research is dominated by multidimensional competency models, leader self-assessment tools, and indicators embedded within broader organizational climate studies. Less attention has been given to developing synthetic, simple indices that enable the operational measurement of perceived managerial readiness from the employee perspective, even though employees' experiences constitute a critical source of information about leadership quality.

There is therefore a noticeable lack of simple, unidimensional screening indices that balance measurement efficiency with basic standards of reliability and validity. In particular, there is a shortage of tools that allow for the rapid monitoring of perceived managerial readiness over time without the need for complex and costly diagnostic procedures.

The aim of this study was to examine whether it is possible to construct and empirically validate a simple, single-factor index of perceived managerial readiness assessed by employees. The study addresses the gap related to the lack of short, synthetic screening tools that could support organizations in monitoring leadership quality in an operational and temporally comparable manner.

2. Theoretical foundations

The literature review indicates diverse approaches to conceptualizing managerial readiness, ranging from psychological and developmental perspectives to an operational view focused on managerial competencies. Four dominant interpretative streams can be identified, forming the theoretical background for the operationalization adopted in this study:

- Readiness as a psychological construct, understood as a state of being both willing and able to perform managerial tasks, is dependent on the organizational context (Armenakis, Bedeian, 1999; Holt et al., 2007; Mutua, Mukumbang, 2025).

- Readiness as a developmental capacity, reflecting the ability to grow, learn, and adapt to the managerial role, emphasizing its dynamic nature (Donovan et al., 2015; Hannah, Avolio, 2010; Singh, Akalenaga, 2019).
- Readiness as a subjective sense of role fit, relevant to how managerial responsibilities are performed and how individuals adapt to their roles (Hu et al., 2016; Shannon, Cantillon, 2024).
- Readiness as an operational perspective, highlighting practical competencies and behaviors necessary for effective performance in everyday management practice (Coronica, Prado, 2025; Gunawan et al., 2019; Yahaya, Segbenya, 2023).

These perspectives demonstrate that managerial readiness is conceptualized in multiple ways, confirming its multidimensional nature and the absence of a single, universally accepted model.

The diversity of theoretical approaches is reflected in how readiness is operationalized, resulting in the use of varied measurement tools. The literature includes both dedicated leadership readiness scales (Oppi et al., 2022; Thien et al., 2025) and instruments based on self-assessment, satisfaction surveys, or 360-degree feedback models (Nowack, Mashihi, 2012; Urban, 2010). In some studies, readiness is inferred indirectly from assessments of leadership effectiveness (Ibar et al., 2025). Literature reviews highlight a wide range of measurement approaches from short scales to extensive questionnaires (Gunawan et al., 2019) while also pointing to the lack of a synthetic and unified approach to measuring readiness.

An important differentiating factor across studies is the source of evaluation. Research is dominated by leader self-assessments or expert evaluations (Al-Fattal et al., 2024; Douglas, McGhee, 2021; Yahaya, Segbenya, 2023), while the employee perspective is less frequently used (Alsulami et al., 2024; Rodrigues et al., 2024). However, it may provide more critical and relationally grounded insights into leadership quality (Long, Sochalski, 2025; Xu et al., 2024).

A noticeable gap in the literature concerns the lack of simple, synthetic screening tools based on employee evaluations. The dominance of complex models and leader self-assessments limits the feasibility of an efficient and temporally comparable measurement of perceived managerial readiness.

Based on this premise, a construct composed of four components was proposed, representing the minimum conditions for managerial readiness:

- Overall assessment of managerial preparedness - reflecting a subjective evaluation of the supervisor’s adequacy for the managerial role.
- Knowledge and competencies - forming the foundation for effective managerial performance (Shannon, Cantillon, 2024; Yahaya, Segbenya, 2023).
- Use of tools - indicating the operational translation of knowledge into action (Ashour, 1973; Cheng, Osman, 2023; Garzón-Lasso et al., 2024; Yukl, Mahsud, 2010).

– Errors - reflecting the ability to avoid fundamental managerial mistakes that reduce leadership effectiveness (Eubanks, Mumford, 2010; Thoroughgood et al., 2013; Zenger, Folkman, 2009).

Considering the developmental context, an extended version of the construct was also developed, supplemented with an item related to formal and informal education. Prior research suggests that learning without formal education is less effective (Alsulami et al., 2024; Yukl, Mahsud, 2010), while other studies indicate that engagement in educational activities is not widespread among managerial staff (Mohamadamin, Shabila, 2025). Therefore, including this dimension in the construct was considered justified.

The adoption of a simple, four-item index was justified by its diagnostic function, enabling a rapid assessment of the overall level of perceived managerial readiness without the need for complex measurement tools. Such a synthetic measure can serve as an "early warning" mechanism, identifying potential risk areas in managerial performance and indicating the need for more in-depth analysis or developmental interventions.

3. Methods

The study was designed as a preliminary validation of a perceptual instrument measuring managerial readiness from the employee perspective. A quantitative survey procedure was applied in two waves (2023 and 2025), enabling the assessment of the construct's temporal stability.

A purposive sample of management students with basic knowledge of management was selected. It was assumed that their perspective remains perceptual and does not necessarily reflect the objective level of organizational practices, but constitutes a relevant indicator of the subjective experience of the relationship with their supervisor.

Table 1.
Sample characteristics

Variable	Category	2023 N (%)	2025 N (%)	Total N (%)
Gender	Male	100 (34,1)	70 (46,7)	170 (38,3)
	Female	193 (65,9)	80 (53,3)	273 (61,7)
Generation	Older cohorts	256 (88,3)	126 (84,0)	382 (86,9)
	Generation Z	34 (11,7)	24 (16,0)	58 (13,1)
Work experience	No experience	27 (9,2)	9 (6,0)	36 (8,1)
	Occasional jobs	79 (27,0)	16 (10,7)	95 (21,5)
	Up to 1 year	72 (24,6)	31 (20,7)	103 (23,3)
	More than 1 year	115 (39,2)	94 (62,7)	209 (47,2)
Place of residence	Rural area	66 (22,5)	40 (26,7)	106 (23,9)
	City < 20,000	43 (14,7)	17 (11,3)	60 (13,5)
	City 20,000 - 100,000	59 (20,1)	29 (19,3)	88 (19,9)
	City > 100,000	125 (42,7)	64 (42,7)	189 (42,7)

Source: own elaboration.

The sample structure in both waves was comparable in terms of place of residence and generational affiliation. However, the 2025 sample included a higher proportion of respondents with more than one year of work experience and a more balanced gender distribution compared to 2023.

The core index was defined as a perceptual measure of managerial readiness, calculated as the mean of four questionnaire items:

- Assessment of the supervisor's overall preparedness for the managerial role.
- Assessment of the supervisor's level of knowledge required to perform the managerial role.
- Assessment of the extent to which various tools (e.g., appraisal forms, motivation tools, bonus systems) are used in performing the managerial role.
- Assessment of the frequency of errors in managing employees by the supervisor (reverse-coded item).

All items were measured on a 1 - 5 scale, and the index was calculated as a mean score provided that at least three out of four responses were available.

The full index represented an extended version of the core index, including two additional items:

- Assessment of formal education (e.g., training) for the managerial role.
- Assessment of informal education (e.g., observing one's supervisor or other managers) for the managerial role.

The full index was calculated as a mean score provided that at least four out of six responses were available. This requirement was introduced to minimize measurement bias resulting from incomplete responses.

The indices demonstrated good reliability (0,763-0,851), with detailed results presented in the descriptive statistics tables.

The analyses included Mann-Whitney U tests, Kruskal-Wallis tests, Spearman correlations, and effect size r for comparisons between waves. Statistical analyses were conducted using SPSS and Jamovi software.

4. Results

To verify the structure of the core index, an exploratory factor analysis using principal component analysis (PCA) was conducted. The adequacy of the data for factor analysis was confirmed by the Kaiser-Meyer-Olkin measure (KMO = 0,711), indicating an acceptable level of sampling adequacy, and a significant result of Bartlett's test of sphericity ($\chi^2(6) = 758{,}482$; $p < 0{,}001$), suggesting significant correlations among the items.

The eigenvalue analysis revealed a single factor with an eigenvalue of 2,538, explaining 63,4% of the total variance. Subsequent components had eigenvalues below 1, supporting the unidimensional structure of the index.

Factor loadings were high for the items supervisor preparedness (0,831) and supervisor knowledge (0,819), moderate for use of tools (0,507), and acceptable for errors (reverse-coded) (0,381). No grounds were identified for removing any of the items. The index demonstrated good internal consistency ($\alpha \approx 0{,}80$-$0{,}85$ depending on the wave).

To confirm the unidimensional structure of the core index, confirmatory factor analysis (CFA) was conducted separately for each wave. In 2023, the index showed an excellent fit to the data ($\chi^2(2) = 0{,}73$; $p = 0{,}694$; CFI ≈ 1,00; SRMR = 0,012; RMSEA = 0,000). In the second wave, the model also demonstrated acceptable fit ($\chi^2(2) = 4{,}01$; $p = 0{,}134$; SRMR = 0,040; RMSEA = 0,082), with the elevated RMSEA interpreted cautiously due to the very low degrees of freedom (df = 2). Overall, the CFA results confirm the unidimensional structure of the core index in both waves.

Multi-group analysis confirmed configural invariance of the model ($\chi^2(4) = 4{,}75$; $p = 0{,}314$), indicating that the same factor structure was maintained across both years. The model with equal factor loadings (metric invariance) did not show a significant deterioration in fit ($\chi^2(7) = 11{,}5$; $p = 0{,}120$), nor did the model with equal intercepts (scalar invariance; $\chi^2(6) = 11{,}5$; $p = 0{,}075$).

These results indicate that the criteria for configural and metric invariance were met, along with acceptable scalar invariance.

Additionally, convergent validity of the model was assessed. In both years, the average variance extracted (AVE) exceeded 0,50 (2023: AVE = 0,62; 2025: AVE = 0,57), and composite reliability (CR) was high (2023: CR = 0,86; 2025: CR = 0,83), confirming adequate consistency and stability of the construct. All factor loadings were positive and significant, with the highest values observed for perceived preparedness and supervisor knowledge.

Given the use of the DWLS estimator, robust fit indices were also reported, confirming very good model fit (Robust SRMR = 0,027).

In summary, the results of factor analyses, invariance testing, and reliability indicators confirm that the core index constitutes a stable and valid measure of perceived managerial readiness across both waves of the study.

In the next step, the level of the core index in 2023 and 2025 was analyzed, starting with descriptive statistics presented in Table 2.

Table 2.
Descriptive statistics

Year	N	M	SD	Me	Alfa Cr
2023	271	3,02	0,93	3,00	0,809
2025	150	3,26	0,83	3,25	0,763

Source: own elaboration.

The mean level of the core index was higher in 2025 (M = 3,26; Me = 3,25) than in 2023 (M = 3,02; Me = 3,00), with slightly lower variability of responses. In both waves, the index demonstrated good internal consistency (α > 0,75).

A comparison between the two years using the Mann-Whitney U test revealed a statistically significant difference in the distribution of the core index (U = 23,660; Z = 2,80; p = 0,005), with a small effect size (r = 0,14), indicating a modest but statistically confirmed increase in 2025.

To assess the demographic stability of the core index, subgroup analyses were conducted separately for each year. The results are presented in Table 3.

Table 3.
Descriptive statistics

Variable	Test	2023	p	2025	p
Gender	U Mann-Whitney	U = 8684,5	p = 0,224	U = 2761	p = 0,248
Work experience	Kruskal-Wallis	H(2) = 5,44	p = 0,066	H(2) = 2,03	p = 0,362

Source: own elaboration.

No statistically significant differences in the level of the core index were found with respect to gender, generation, work experience, or place of residence in either 2023 or 2025 (all p > 0,05).

An analysis including the interaction effect of year × generation did not reveal a significant interaction for the core index (F(1,415) = 0,06; p = 0,80), indicating that the change in the index over time was similar across generational cohorts.

To verify the stability of the results, the extended version of the index was also analyzed. In 2023, its mean was M = 2,93 (SD = 0,87), and in 2025, M = 3,14 (SD = 0,81); reliability was good in both waves (α = 0,85; α = 0,83). The pattern of results remained consistent with the core index, indicating that the inclusion of the educational component did not alter the interpretation of the findings.

5. Disscusion

The results indicate a statistically significant, albeit modest, increase in the level of perceived managerial readiness (core index) between 2023 and 2025. This change was independent of the analyzed demographic characteristics, strengthening the interpretation that the observed effect is not driven by shifts in sample structure but may reflect a genuine change in the perception of supervisors' preparedness. At the same time, the influence of contextual factors - such as rising expectations toward leaders or cultural changes within organizations - cannot be ruled out.

The findings partially align with research on leadership readiness conceptualized as a psychological construct (Oppi et al., 2022; Thien et al., 2025). However, in contrast to many prior studies focusing on leader self-assessment (Mohamadamin, Shabila, 2025), the present study adopts the employee perspective in evaluating supervisors. The results suggest that perceived managerial readiness has a predominantly behavioral dimension - encompassing knowledge, preparedness, use of tools, and learning from mistakes - rather than being limited to motivational or identity-based aspects.

The analysis of the extended version of the index confirmed the stability of the findings. The inclusion of the educational component did not substantially alter the overall pattern of results, indicating that, from the employee perspective, direct experience of managerial behaviors plays a more critical role than formal development activities. The high proportion of missing responses in this area may further reflect limited awareness of development processes within organizations.

Returning to the core index, it should be emphasized that it constitutes the main methodological contribution of this study. Regardless of the results obtained for the extended version, the validity, unidimensional structure, and temporal measurement invariance of the simple perceptual index of managerial readiness were confirmed. The study thus addresses a gap in the literature dominated by complex, multidimensional tools by offering a synthetic measure that enables the operational assessment of individual managerial readiness. At the same time, the proposed approach shifts the focus from readiness understood as an individual trait toward readiness constructed relationally through employee perceptions.

From a practical perspective, this implies that perceived managerial readiness is driven primarily by observable behaviors in everyday work rather than solely by formal development activities. Monitoring this index may serve as a useful complement to traditional measures of training effectiveness and function as an early signal of leadership quality.

6. Limitations and future research directions

The study has several limitations that also define directions for further validation of the proposed instrument. First, the design did not involve tracking the same individuals over time but relied on two independent samples, which limits the ability to draw conclusions about changes at the individual level. Future research should therefore employ panel designs to examine whether and how perceptions of managerial readiness evolve among the same respondents.

In the case of the extended version of the index, a high proportion of missing responses was observed in the educational components, resulting in a substantial reduction in the number of analyzed observations. This may affect the stability of model estimates and limit the full interpretation of results for this version of the index.

The measurements were based exclusively on employee evaluations, without incorporating the perspectives of leaders or objective organizational indicators. The use of a single data source increases the risk of common method bias. Future studies should extend the validation of the instrument by examining its convergent and discriminant validity in relation to other measures of leadership, team effectiveness, and organizational climate. Additionally, the use of multiple data sources would allow for assessing the alignment between perceptual evaluations and actual organizational outcomes.

Furthermore, the sample consisted of management students, which limits the generalizability of the findings to broader employee populations with different levels of professional experience. Therefore, future validation efforts should include more diverse occupational groups and organizations representing different industry sectors.

Accordingly, the present study should be treated as an initial stage of validating a perceptual index of managerial readiness, the further development of which may contribute to the creation of a synthetic yet reliable diagnostic tool for organizational practice.

7. Conclusion

The aim of this study was to examine whether it is possible to construct and empirically validate a simple, single-factor index of perceived managerial readiness. The results confirmed its stable factor structure, temporal measurement invariance, and good reliability. The index did not significantly differentiate demographic subgroups, while remaining sensitive to changes over time.

The study thus provides evidence for the feasibility of using a synthetic measurement tool that addresses a gap in the literature dominated by complex constructs. At the same time, it shifts the focus from leader self-assessment toward a relational and perceptual understanding of readiness, grounded in employees' experiences.

From a practical perspective, this implies that the assessment of managerial readiness does not need to rely solely on competency audits or formal participation in development programs. Instead, observable managerial behaviors play a key role in shaping employee perceptions. A simple perceptual index may support the ongoing monitoring of leadership quality as well as development and succession decisions, offering an efficient alternative to more complex models in contexts requiring rapid diagnosis.

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COMMUNICATION AS AN ELEMENT OF THE 4C COMPETENCIES – SELF-ASSESSMENT AMONG STUDENTS AT THE UNIVERSITY OF ECONOMICS IN WROCŁAW

Magdalena BOROWSKA[1*], Agata PIETROŃ-PYSZCZEK[2]

[1] Uniwersytet Ekonomiczny we Wrocławiu; magdalena.borowska@ue.wroc.pl, ORCID: 0000-0001-5627-7058
[2] Uniwersytet Ekonomiczny we Wrocławiu; agata.pietron-pyszczek@ue.wroc.pl, ORCID: 0000-0002-3861-3609
* Correspondence author

Purpose: To identify the specific skills that constitute effective communication and to assess their level among a group of working students at the University of Economics who represent Generation Z.
Methodology: A questionnaire was prepared in the MS Forms application. It included demographic questions (gender, job title). Using a Likert scale, respondents were asked to self-assess their competencies. Respondents were asked to respond to the following statements: (1) I can express my thoughts clearly and precisely; (2) I adapt my communication style to the listener; (3) I listen carefully to the speaker, trying to understand them well; (4) I feel at ease presenting my ideas in a group; (5) I am able to communicate effectively in stressful or difficult situations.
Findings: An analysis of the research data has shown that students' communication skills are inadequate. The respondents rate their adaptability and listening skills most highly, whereas they find situations requiring them to speak in public and communicate under stressful conditions more challenging.
Research limitations/implications: The study was limited by a small sample size and inclusion of students from only one university. Future research should involve participants from multiple universities and compare students' self-assessments with evaluations made by their supervisors. Further studies should also examine the role of trust-building by academic staff and students' attitudes toward active learning methods in reducing fear of public speaking and improving communication styles.
Practical implications: Universities should improve lecturers' communication competencies and implement teaching methods based on realistic communication scenarios. Regular opportunities for speaking in front of groups may help students overcome psychological barriers and strengthen communication skills.
Originality/value: The originality of this study stems from a two-stage research procedure (desk research and surveys), which enabled the creation of a communication profile for working members of Generation Z. The findings are of significant value to academic teaching and human resource management, highlighting specific areas requiring support in the process of young employees' professional adaptation.
Keywords: interpersonal communication, future-ready skills, Generation Z, soft skills.
Category of the paper: Research paper.

1. Introduction

There is much talk these days about so-called ‘skills of the future’. Their importance in the changing VUCA world (volatile, uncertain, complex and ambiguous) is frequently highlighted, as they enable people to function effectively and adapt to new conditions, and possessing them makes it possible to pursue the jobs of the future (Pudło, 2024, p. 394). This takes on particular significance in the context of the younger generation entering the labour market, who in particular should develop and strengthen the potential of the competences perceived today as key. We assume that the competences of the future are a set of skills that will be particularly valued and needed in a rapidly changing world, especially in the context of technological development, automation, artificial intelligence, and social and climate change.

The literature presents various models of competence, the role of which is primarily to define a core set of skills that are essential for creating value and developing in a highly digitalised world. J. Lamri, (2021, p. 128) points out that among the skills comprising various competency models, four are consistently mentioned: creativity, critical thinking, communication and cooperation – the 4Cs – which, as he notes, appear to be the least computerised. They are considered crucial for achieving academic and professional success, yet they still require extensive research and empirical evidence. K. Burieva (2025, p. 34) points out that the development of 21st-century skills, and in particular the 4Cs, is now becoming a key area of focus for modern education systems worldwide.

The Generation Z cohort analysed in this publication realises that technical skills can quickly become obsolete, whilst interpersonal skills remain universally applicable. This is confirmed by research conducted by ARC Rynek i Opinia, (2024), which states that in the age of digitalisation, Gen Zers recognise that technology is not everything; as many as 49% of respondents in the youngest age group highlight the importance of soft skills, such as empathy, communication skills and the ability to work effectively in a team.

In this study, we focus on one of the components of the 4K model – communication, which should be understood as a ‘multidimensional process of sending, transmitting and receiving signals that vary in form and content’, aimed at ‘the exchange of thoughts, and the sharing of knowledge, information and ideas’. It is purposeful, complex and multi-layered (Sulyma, 2022, p. 15).

It is said that Generation Z has completely redefined the meaning of communication and interacting with others. This is a generation that never puts down its smartphone, sends countless text messages, and treats its phone like a portable computer that it uses for tweeting. Gen Zers use abbreviations in their writing, such as LOL, XD. In their actions and communication, Generation Z avoids conflict, risk, disappointment and failure. Perhaps they will retreat even further into the virtual world, fearing confrontation with real-life situations

that need to be resolved or worked through (Rogulska, 2018, p. 134), which seems to determine the need to develop communication skills within this group.

The aim is to identify the specific skills that contribute to effective communication and to assess their level among a group of working students at the University of Economics who represent Generation Z.

The specific objectives are to identify the level of:

1. The ability to express thoughts clearly and precisely.
2. The ability to adapt one's communication style to the audience and context.
3. The ability to listen actively and understand the speaker.
4. Respondents' comfort in presenting their own ideas within a group.
5. Effectiveness in communicating in stressful or difficult situations.

2. Communication skills

Effective communication is the cornerstone of building relationships within a team. Skilfully managed communication determines a team's success and satisfaction with the work carried out; it influences the development of interpersonal relationships, but also affects the effectiveness of the changes implemented. The exchange of information between employees is a key component of the process of knowledge development, both individual and collective. However, people often fail to realise that a large proportion of problems stem from a lack of communication skills (Szczęsna, 2021, p. 28).

According to J. Lamri (2021, p. 133), communication skills are becoming particularly important in the era of remote teams. The researcher identifies three fundamental communication activities: effectively conveying messages whilst being sensitive to the recipient, attentively receiving messages by eliminating distractions, and providing feedback which – as communication metadata – helps both parties avoid misunderstandings. Furthermore, the author identifies seven skills essential for effective communication: openness, empathy, creating a safe environment, a positive attitude, social adaptability, inspiring others, and motivating others. A.V. Pesha & N.V. Shramko (2020, p. 888) point out that communication skills foster learning, discovery and the sharing of ideas. Well-developed communication skills ensure the ability to act effectively in a variety of communication situations, encompassing the selection of appropriate linguistic behaviours, the ability to persuade and influence, active listening, the conscious use of non-verbal cues, and the use of foreign languages. They also encompass cross-sectoral communication, understanding of meaning, multilingualism and multiculturalism, negotiation and persuasion, and media literacy as an area combining digital and communication competences.

3. Communication within the Z generation

It is noted that communication within an organisation is often seen as a challenge or a problem, particularly when Generation Z is involved in the communication process (Drzewiecki et al., 2015, p. 123). A characteristic feature of Generation Z is their proficiency in using technology and a clear preference for digital communication tools. Growing up in a hyper-connected world, where instant messaging, social media and collaboration platforms are an integral part of everyday life, means that in group work this generation often achieves the best results when technology is seamlessly integrated into the process (Dass et al., 2021, pp. 75-76). Nowadays, widely used platforms such as Microsoft Teams enable Gen Z to communicate effectively, share documents and manage tasks. These factors, combined with a strong desire to achieve goals and maintain authenticity, influence young employees' approach to communication. This generation also has the ability to seek feedback and use it constructively to improve performance. However, they may struggle with an over-reliance on asynchronous communication, which can lead to potential delays or misunderstandings if expectations are not clearly defined (Katz et al., 2021, cited in Chuah, p. 426). In this context, A. Chomicka and co-authors (2022, p. 95) point out that feedback should be specific and substantive – this may be linked to the frequent 'liking', rating and commenting on posts on social media.

Generation Z is the first generation to grow up and socialise in an environment of constant access to the internet and social media. It is noted that members of Generation Z spend more time online than offline. Young people prefer to use technology as a medium for communication and for maintaining relationships with others. They tend to replace telephone calls with visual or text-based communication. Generation Z in Poland grew up in an era of prosperity, a capitalist economy and technological boom. They are often described as a privileged generation who had an easier entry into the world and greater opportunities. It is suggested that this has directly influenced the development of their communication skills and preferences (Sulyma, 2022, p. 21).

4. Methods

The survey was conducted amongst students at the University of Economics. A prerequisite for participation in the survey was being in employment (including those undertaking an internship or work placement). As this was a pilot study, a convenience sample was used. The questionnaire was sent to 162 individuals (seven seminar groups) with whom the authors have direct contact during teaching sessions. Not all questionnaires were completed correctly

and comprehensively; ultimately, the analysis presented here covers 99 people. Women accounted for 62%, men for 28%. The respondents were representatives of Generation Z, born after 1997. The research was conducted in January 2025.

A survey was created using the MS Forms app, ensuring the anonymity of respondents. It included demographic questions (gender, job title). Using a Likert scale, respondents were asked to self-assess their competencies. The aim is to evaluate the specific skills that contribute to effective communication.

The specific competences assessed are described in the following statements:

- Potrafię jasno i precyzyjnie wyrażać swoje myśli (K1).
- I adapt my communication style to the listener (e.g. formal/informal) (K2).
- I listen carefully to the speaker, trying to understand them fully (K3).
- I feel at ease presenting my ideas to a group (K4).
- I am able to communicate effectively in stressful or difficult situations (K5).

Basic descriptive statistical methods were used to analyse the results, including the calculation of mean values, standard deviations and the distribution of responses.

5. Results

The respondents who took part in the survey were characterised by a high degree of optimism regarding their assessment of their communication skills. Statistical analysis indicates that the respondents (N = 99) generally rate their communication skills highly. They most frequently selected the responses ‘definitely yes’ and ‘somewhat yes’. The mean values for all variables studied range from 3.75 to 4.49 on a five-point Likert scale (see Figs. 1 and 2). It was assumed that a person choosing the ‘somewhat yes’ response expresses a positive opinion but is not entirely convinced; they are characterised by some hesitation and a lack of full confidence regarding their possession of the assessed skills.

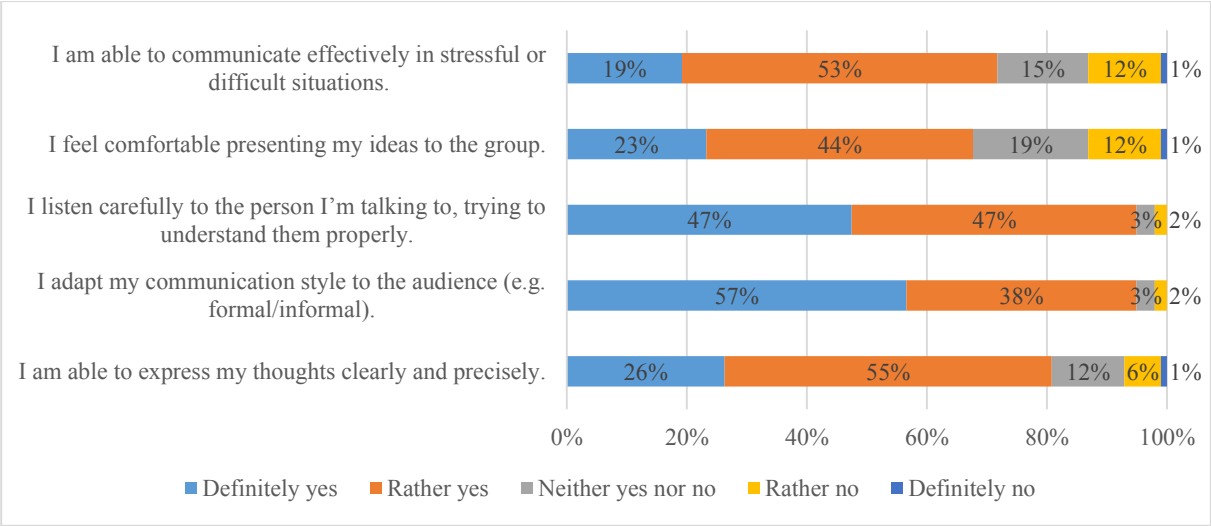

Figure 1. Assessment of individual components of communication.

Source: Compiled by the author.

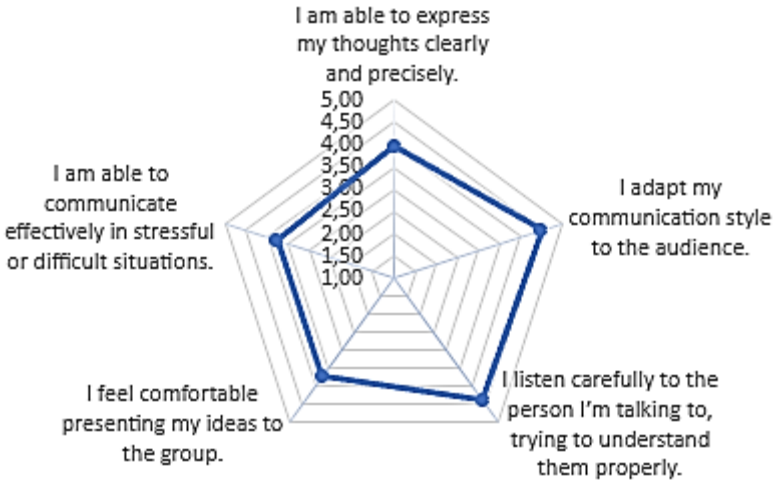

Figure 2. Competency profile of the study group in the area of communication (average for N = 99).

Source: Compiled by the author.

As can be seen in Figures 1 and 2, the highest-rated competencies include those related to:

- Adapting one's communication style to the listener (K2) (57% answered 'definitely yes'; 38% answered 'somewhat yes').
- Listening attentively and striving to understand the other person (K3) (47% answered 'definitely yes' and the same percentage answered 'somewhat yes').

It would appear that these skills can be regarded as strengths of the group under study, particularly in the context of the emphasis currently placed on teamwork, building interpersonal relationships within teams of mixed ages, and functioning effectively in a professional environment.

Slightly lower, though still high, scores were recorded for variable K1 – 'I can express my thoughts clearly and precisely' (26% answered 'definitely yes'; 55% answered 'somewhat yes').

The lowest ratings were given to skills relating to:

- The freedom to present one's own ideas within a group (K4) (23% answered 'definitely yes'; 44% answered 'somewhat yes').
- Effective communication in stressful or difficult situations (K5) (19% answered 'definitely yes'; 53% answered 'somewhat yes').

Table 1 presents descriptive statistics.

Table 1.
Communication skills – descriptive statistics

Descriptive statistics					
	K1 I can express my thoughts clearly and precisely.	K2 I adapt my communication style to the listener.	K3 I listen carefully to the speaker, trying to understand them fully.	K4 I feel at ease presenting my ideas to a group.	K5 I can communicate effectively in stressful or difficult situations.
N	99	99	99	99	99
Mean	3.99	4.49	4.40	3.75	3.77
Median	4	5	4	4	4
Standard deviation	0.851	0.660	0.653	0.962	0.935
Minimum	1	2	2	1	1
Maximum	5	5	5	5	5

Source: Compiled by the author.

As can be seen, adapting one's communication style to the audience (K2) has a median score of 5, which means that at least half of the respondents selected the highest possible response, i.e. they were fully convinced that they possessed this skill. The high mean (4.49) indicates that the vast majority of responses fell within the range of 4 'somewhat yes' and 5 'definitely yes', whilst the low standard deviation (0.660) demonstrates a high degree of consistency in the assessments within the study group. This means that this is the respondents' strongest communication competence.

The ability to listen attentively to the speaker (K3) was also rated highly. A median score of 4 indicates that the typical response from respondents was 'somewhat agree', whilst the high mean (4.40) shows that a significant proportion of respondents also selected the 'strongly agree' option. The low variation in responses (SD = 0.653) suggests that most respondents perceive this skill in a similar way, which allows it to be considered common and well-developed within the study group.

The ability to express one's thoughts clearly and precisely (K1) was rated slightly lower. An average close to 4 (3.99) indicates that respondents rate this competence fairly highly, though not as highly as the ability to listen or to adapt a message to the audience. This may suggest that some respondents do not always feel entirely confident about the clarity of their own statements, despite their generally positive self-assessment.

The lowest average scores were recorded for freely presenting one's own ideas within a group (K4) and communicating effectively in stressful or difficult situations (K5). The averages of 3.75–3.77 respectively indicate that not all respondents feel confident in these situations. Higher standard deviations mean that the responses were more varied, suggesting the existence of individual differences in coping with group presentations and communication under pressure.

6. Discussion

Our respondents indicated that they are able to express their thoughts clearly and precisely. In this regard, it is worth referring to the publication by A. Wawrzonek (2023, pp. 80-81), in which the author highlights the communication preferences of young employees. We read that members of Generation Z are far more likely to use low-context communication, which is characterised by precision, simplicity and clarity; messages are expressed and understood directly, and repetition and clarification are highly valued. In this type of communication, there is no room for 'reading between the lines', making assumptions or paying attention to nuances. At the same time, the literature on the subject also indicates that Generation Z is characterised by distinctive vocabulary, linked, amongst other things, to new technologies and the virtual world. This vocabulary is rich in neologisms (e.g. alternatywka, chajzerować, eluwina, memiczny) (Praszek, Wojtkowiak, 2020, pp. 69-70), slang (e.g. masny, normik, mamedżer) (Ramusiewicz-Osypowicz, 2021), jargon, abbreviations, loanwords, etc., which make it difficult to communicate with members of older generations (Bencsik et al., 2016, p. 101).

We also noted a high proportion of respondents agreeing with the statement "I adapt my communication style to the recipient". It is worth referring to O. Filip and N. Kaźmierczak (2025, pp. 55-57), who, in their research, highlight the importance of context, which they understand as the relationship between the sender and the recipient of a message. They point out that context is crucial for understanding messages. Respondents from Generation Z stated that taking into account the relationship between themselves and the sender, as well as knowing the sender's identity, facilitates the correct interpretation of messages. The reception of the same message sent by a peer versus an adult can differ drastically. The relationship between the sender and the recipient is also important. Generation Z is characterised by the use of abbreviations and emojis in messages, and a preference for concise communications, which, depending on the context, may be misinterpreted by members of older generations. This is illustrated by the example of the smiley face emoticon, which Generation Z perceived as cold and ironic, whilst Generations X and Y saw it as neutral or an expression of kindness. It is noted that younger generations often do not pay attention to whether their writing style is

understandable to older interlocutors, which can lead to disruptions in the communication process. The same authors studied the communication styles of different generations (including Generation Z, which is of interest to us). This research indicates that Generation Z exhibits a certain flexibility regarding the level of formality in their communication style. Young employees see no obstacles to using less formal forms, which, as the authors' research suggests, may lead to potential tensions, particularly in intergenerational teams. Furthermore, the researchers point out that Generation Z may perceive formality in the workplace as unnecessary rigidity that does not foster effective collaboration. Respondents from this group emphasised the importance of flexibility in communication. K. Chuah and colleagues (2025, pp. 427-429) also investigated preferred communication styles within Generation Z. With regard to the assertive communication style, participants demonstrated consistency in expressing their ideas, whilst respecting others and actively listening to group members. It is worth noting that the findings regarding active listening correlate with ours. Our respondents indicated that they are able to listen attentively to the speaker, striving to understand them well. K. Chuah obtained slightly lower average scores in terms of providing constructive feedback and expressing needs whilst compromising. The aggressive style proved to be used less frequently. However, participants showed a moderate degree of support for behaviours such as steering the discussion towards their own preferences or strongly emphasising their views; they also demonstrated a minimal tendency to ignore group consensus or openly criticise the ideas of their group colleagues. In the case of passive-aggressive behaviour, behaviours such as expressing dissatisfaction through sarcasm or undermining group decisions were rarely observed. The passive style revealed a clear reluctance to actively resolve conflicts. High scores on behaviours such as remaining silent during group conflicts and allowing others to make decisions revealed that Generation Z individuals prefer to avoid conflicts rather than engage in them.

Our respondents also stated that they are able to listen attentively to the person they are speaking to, striving to understand them well. H. Raslie & S. Ting, (2021, p. 10) studied the communication styles of Generation Y and Generation Z. The researchers point out that there are certain differences between the two groups regarding whether their members talk more or listen more. It turns out that both groups listened more than they spoke, but the average values indicated that Generation Z participants spoke more than they listened.

In our survey, respondents also indicated that they feel comfortable presenting their ideas in a group. Many researchers suggest that trust forms the basis of effective communication for Generation Z. A high level of trust encourages Gen Zers to build good relationships, maintain strong bonds, strive for teamwork and increase engagement in the workplace. The atmosphere and interpersonal relationships are also key values for young employees (Sulyma, 2022, p. 17), which we believe can increase the freedom to share ideas and knowledge within the team.

In his publication, J. Kutlák (2019, p. 67) points out that Generation Z prefers face-to-face communication, followed by text messages, phone calls, emails and social media. He points out that, unlike older generations, Gen Zers prefer to communicate only when necessary, and that such communication should be quick and easy. It can therefore be assumed that young people are keen to share ideas, but the effectiveness of this process depends on their expectations being met, for example, regarding the shift of communication to the online world. In this context, A. Całek (2021, pp. 105-108) points out that members of Generation Z state that they feel more comfortable when they can interact with others online. Their ability to communicate without the use of the internet is declining.

In our research, the Zetki group claimed that they were able to communicate effectively in stressful or difficult situations. Meanwhile, I. Dronia (2025, p. 116) points out that months of remote learning have had very negative consequences. We observe significantly higher levels of anxiety and alienation, as well as depressive behaviours; students find it harder to return to normal peer interactions. The problem lies in interpersonal communication and speaking freely in front of a group. Research by M. Lin and colleagues (2025, p. 2) also indicates that approximately 63% of the general population report experiencing some level of public speaking anxiety (PSA), and around 61% of college students report it as their most common fear. PSA is consistently recognised as one of the most feared situations among both students and the general public.

7. Summary

The development of 21st-century skills, and in particular the 4Cs – critical thinking, communication, collaboration and creativity – has, as Burieva (2025, p. 33) points out, now become a key focus for modern education systems worldwide.

Empirical research has revealed deficits in communication skills among the group of students analysed. The findings point to the need for a systematic strengthening of the teaching skills of academic staff, particularly in terms of adapting teaching methods to the cognitive characteristics of today's students (the requirement for concise and specific communication). It is crucial to build relationships based on trust and to select teaching methods that allow for the identification of individual communication styles. The educational process should be enriched with workshop-based activities that create realistic conditions for practising interpersonal skills and overcoming barriers associated with public speaking in front of a group.

Building communication resilience in challenging situations, e.g. using the ‘small steps’ method (practising short, ungraded statements that help participants become comfortable with public speaking without fear of the outcome); high-pressure simulations (using time-limited case studies, which allow for practising composure and logical speech under pressure); learning self-control (practising simple breathing and cognitive techniques as a standard part of preparation for a presentation).

Instead of lectures on communication, participatory and workshop-based methods should be implemented. It is essential to shift from the role of ‘evaluating expert’ to that of ‘facilitator of communication processes’, who creates a space for peer training and normalises stress as a natural part of developing 4C skills.

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THE PARADOX OF AUTONOMY IN ENTREPRENEURSHIP: TENSIONS BETWEEN FREEDOM AND CONSTRAINT

Agnieszka BRZOZOWSKA[1*], Jacek PASIECZNY[2]

[1] University of Warsaw, Faculty of Management; abrzozowska@wz.uw.edu.pl, ORCID: 0000-0002-9908-6427
[2] University of Warsaw, Faculty of Management; jpasieczny@wz.uw.edu.pl, ORCID: 0000-0002-9405-3861
* Correspondence author

Purpose: The purpose of this paper is to explore how entrepreneurs experience and negotiate the paradoxical tensions between autonomy and risk in their everyday business practice.
Design/methodology/approach: The study adopts a qualitative research design. Data were collected through 40 in-depth, semi-structured interviews with entrepreneurs running micro, small and medium-sized enterprises in Poland between 2020-2022.
Findings: The findings show that entrepreneurship is characterized by a paradox of autonomy, where the pursuit of independence coexist with strong dependencies on markets, clients, institutions and external events. Autonomy appears as a dynamic and negotiated process rather than a stable state.
Research limitations/implications: The study is based on a qualitative sample, which limits the generalizability of the findings. Future research could extend the analysis by using larger samples, quantitative or comparative studies across countries and institutional context.
Practical implications: The results suggest the need to design institutional and support mechanisms for entrepreneurs that acknowledge the paradoxical nature of autonomy and risk. Such support may include mentoring programmes, development of adaptive competencies and well-being supports, as well as initiative that recognize non-financial motivations such as meaning, mission and contribution to common good.
Social implications: The findings highlight the importance of social and institutional support systems for entrepreneurs and point to the value of promoting work models based on responsibility, autonomy and collaboration. Understanding the paradoxical nature of entrepreneurial autonomy may also inform policies aimed at improving entrepreneurs' quality of life and societal of entrepreneurial work.
Originality/value: The paper contributes to entrepreneurship research by applying a paradox perspective to the micro-level experience of entrepreneurs. It shows entrepreneurship should be understood as dynamic process of negotiant autonomy and risk though adaptive learning rather than as state of permanent independence.
Keywords: entrepreneurship, autonomy, entrepreneurial well-being, paradox theory.
Category of the paper: Research paper.

1. Introduction

Organizational paradoxes constitute a key topic in management research, highlighting complex and often contradictory tensions that may emerge in various organizational contexts. An organizational paradox refers to the coexistence of contradictory yet interrelated elements that persist over time and require organizations and individuals to demonstrate flexibility and innovativeness (Miron-Spektor et al., 2018; Weller, Ran, 2020). Schad et al. (2016) emphasize that research on paradoxes offers important insights into organizational tensions that may influence firm effectiveness and performance. In particular, the authors identify key dimensions of such paradoxes, such as balancing innovation and stability or decentralization versus centralization, which may coexist within organizational systems. Although research on organizational paradoxes highlights the importance of microfoundations and individual cognitive processes in coping with conflicting demands (Miron-Spektor et al., 2018), these analyses focus primarily on the organizational context. There is a lack of research showing how similar mechanisms operate at the level of the entrepreneur as an individual acting outside formal organizational structures, under conditions of high uncertainty and personal responsibility for risk. In response to this research gap, the aim of this article is to present how entrepreneurs, as individuals, experience and manage the paradoxical tension between autonomy and risk in the everyday functioning of their ventures.

2. Contexts of Organizational Paradoxes

Organizational paradoxes are often identified in corporations. For example, research by Khalid highlights the importance of financial practices in the context of corporate performance, which is also associated with managing paradoxes between different approaches to financing and innovation (Idham Khalid, 2025). Pasieczny (2017) emphasizes that in difficult times organizations may force themselves to reduce costs in a pathological manner, which leads to the loss of developmental potential. Paradoxically, the perceived need to conserve resources may lead to reduced innovativeness and, consequently, to stagnation. This phenomenon illustrates how difficult decisions related to motivation may lead organizations toward long-term problems, even when they aim for short-term stability (Pasieczny, 2017). Decisions to enter into alliances with other entities may create additional paradoxes for firms. The source of tensions lies in the fact that alliances integrate entities with different goals, strategies, and operational solutions. On the one hand, firms engage in numerous alliances to secure and expand their competitive advantage and growth; on the other hand, these alliances demonstrate surprisingly low success rates (Kale, 2010). Paradoxes are also clearly visible in public

administration. In the context of public administration, a paradox may be understood as a situation in which actions intended to produce a particular outcome simultaneously lead to effects that contradict that goal. On the one hand, public administration is expected to pursue public objectives in an efficient and predictable manner; on the other hand, numerous contradictions can be observed between the intentions of reforms and their actual consequences. Paradoxical phenomena emerge both at the level of reforms and in everyday administrative practice, including strategic management, inter-institutional cooperation, and processes of digitalization. New solutions often reveal new organizational and operational dilemmas rather than improving administrative functioning. Paradoxical phenomena also appear in more specific contexts of public administration activities, such as digitalization (Khlutkov, 2024), organizational learning (Pasieczny, Rosiak, 2023), or organization–client relationships (Pasieczny, 2025). Schädeli and Ritz (2024) provide a broad macro-level perspective on paradoxes, indicating that the multiplicity of terms and approaches in the literature makes it difficult to build a shared research language. Regardless of organizational form, appropriate leadership is particularly important for individuals operating under conditions of tension and contradiction. Research on educational leadership illustrates how effective leadership can act as a catalyst for organizational commitment, which is important in the context of managing paradoxes (Othman & Busari, 2025). Managers who are able to balance different leadership styles and adapt them to changing tasks may cope more effectively with internal tensions and contradictions.

Paradoxes are also present in entrepreneurial activity. They manifest themselves, among other things, in approaches to risk. Although entrepreneurs are often perceived as individuals with a high propensity for risk-taking, research indicates that risk is selective and contextual in nature. Entrepreneurship requires a willingness to take risks; however, it is simultaneously based on pragmatically limiting risk to domains perceived as associated with opportunities rather than threats to personal values or security (Kubiciel-Lodzińska et al., 2025). A similar paradoxical character is revealed in the domain of autonomy, where the pursuit of independence coexists with the necessity of cooperation and engagement in team-based activities (Gelderen, 2016; Van de Ven et al., 2007). Entrepreneurs often experience a paradox consisting in the simultaneous need for independence (autonomy) and full commitment to running their businesses. On the one hand, autonomy is a key motivator for establishing one's own venture; on the other hand, its realization requires continuous dedication and submission to the demands of the market, clients, or business partners (Foley et al., 2018; Gelderen, 2016). Research shows that autonomy is not given once and for all but undergoes dynamic changes depending on the stage of the firm's development, relationships with clients, and financial circumstances (Gelderen, 2016). The literature also highlights the paradoxical nature of entrepreneurial motivation, in which entrepreneurs pursue both individual and collective interests, for example by combining the pursuit of autonomy and economic success with an orientation toward the common good, meaning, and social responsibility (Brzozowska, 2025). Entrepreneurship is

therefore not based solely on individualism but also on cooperation and the building of relationships, which requires reconciling conflicting aspirations toward autonomy and community (Van de Ven et al., 2007). The concept of ambidexterity (the ability to combine exploration and exploitation) is crucial for understanding how entrepreneurs cope with paradoxes. Entrepreneurs must constantly balance the search for new opportunities with the effective use of existing resources, which generates cyclical tensions and requires the development of so-called "paradoxical leadership" (Audretsch, Guerrero, 2023; Klonek et al., 2021). However, a high level of multitasking may limit the ability to switch effectively between these activities (Klonek et al., 2021). Paradoxes are not an obstacle but rather a source of innovation and development. The ability to accept and manage tensions fosters creativity, adaptability, and the long-term success of enterprises (Miron-Spektor et al., 2018; Weller, Ran, 2020). Developing "paradoxical thinking" enables entrepreneurs to cope more effectively with uncertainty and environmental complexity (Miron-Spektor et al., 2018; Pinelli et al., 2025).

3. Research Methodology

The choice of a qualitative method was justified by the exploratory nature of the research question posed: **How do entrepreneurs experience and cope with the paradox of autonomy and risk in the everyday functioning of their ventures?** This method enables an in-depth analysis of subjective experiences, narratives, and meanings that entrepreneurs attribute to their work in conditions characterized by the coexistence of conflicting demands of freedom and responsibility for risk (Kostera, 2021). Semi-structured interviews were conducted between 2020 and 2022 with 40 Polish entrepreneurs running micro, small, and medium-sized enterprises across Poland. The sample was intended to be as diverse as possible in order to capture a wide range of experiences (Palinkas et al., 2015). The interviews lasted approximately 60 minutes on average. Twenty-three men and seventeen women participated in the study. All interviews were recorded and subsequently transcribed and coded. The analysis of the empirical material was inductive in nature and began with open coding, in which labels were assigned based on what emerged from the statements, without imposing predetermined theoretical categories. In the next stage, the codes were organized into lower-order categories and combined into themes reflecting paradoxes, in accordance with the principles of thematic analysis (Braun, Clarke, 2022).

4. Results and Discussion

Self-employment vs. Corporation – The Paradox of Unfulfilled Expectations. Many respondents had previous experience working in corporations and, when deciding to establish their own businesses, held specific hopes and expectations. The paradox lies in the fact that corporations, while promising security and predictability, often turned out to be impersonal and unstable, whereas running one's own business, while providing a sense of agency and meaning, requires continuous sacrifice and adaptation to unpredictable conditions.

> I worked as a director, earned good money, paid taxes. Then illness strikes, and after nine months the law allows the employer to dismiss a sick employee… Suddenly you receive 70% of the national average salary instead of 70% of your own salary. That felt like a huge injustice to me. I concluded that I had to take care of myself because neither the state nor the employer would do it. (…) By creating my own business, I can be guided by reason, intelligence, and skills… If you work for yourself, there are no limits—only common sense. [R1]

> Our work is also very irregular. There are periods like now when I can work from eight to four, roughly speaking. But there are also periods when we work sixteen hours a day. I remember the end of last year: we go to Warsaw to shoot a project. We leave Kraków at five in the morning, set everything up by nine, finish shooting at seven in the evening. We get back to Kraków around eleven or midnight, repack everything. Then we get up at four in the morning and start another three days of shooting. There are such periods, and at those times you definitely feel tired and think that you could just quit and take a regular job. On the other hand, I can work in the way I want. I mean that the style of work is just as important to me—many things depend on me. I am not afraid of things depending on me, and I am not afraid of responsibility either. I probably would not switch to a salaried job, at least not at this stage of my life. [R5]

> Recently I had an interesting offer to return to a corporation, but I think it would be impossible. After years of being my own captain and helmsman, it would be very difficult to hear again: 'Do it this way because that's how it has to be,' even though I know it could be different. [R15]

> After a few years of running my own business, I feel much more relaxed than when I was in a corporation, even though the company itself generates more responsibility and I cannot simply separate my private life from my professional life. [R22]

> On the one hand, a salaried job would probably be more structured and less stressful, but on the other hand running a business from home gives me the comfort of being with my children and the feeling that I am doing something good for the planet. [R31]

The analysis of the cited statements reveals a coherent yet multidimensional picture of the experiences of individuals transitioning from corporate employment to entrepreneurial activity. A key theme is disappointment with the institutional and corporate order of work, which becomes an important impulse for changing career paths. Respondents describe corporations as impersonal structures, highly formalized and insensitive to individual crisis situations, such as illness. At the same time, entrepreneurship is not perceived as an escape from work but rather as a qualitative transformation of it. Working "for oneself" is demanding, intense, and irregular, often leading to both physical and psychological fatigue. Descriptions of long working days, project-based work, and the necessity of continuous adaptation to changing conditions (e.g., the pandemic and lockdowns) confirm findings from the literature indicating that entrepreneurs more frequently experience stress, work overload, and blurred boundaries between professional and private life (Baron et al., 2016; Stephan, 2018). At the same time, this variability is sometimes interpreted not as a disadvantage but as an inherent feature of work that provides a sense of meaning and agency, as well as a stronger feeling of social usefulness and purpose. Respondents point to the possibility of being closer to family, acting in accordance with their own values (e.g., environmental concern), and having a tangible impact on their surroundings. The literature confirms that for many entrepreneurs non-financial motivations, such as meaning, mission, or contribution to the common good, are as important as income (Shepherd, Patzelt, 2011).

Independence vs. Embeddedness – The Paradox of Autonomy. A frequently cited motivation for starting a business is the desire to satisfy the need for independence. However, practice indicates that entrepreneurial independence may be significantly constrained.

> Polish regulations, on the one hand, limit certain possibilities, but on the other hand running your own business also brings many benefits… The state works like a company, it needs resources in order to redistribute them. If someone does not want that, they can always work as an employee. [R19]

> When entering a startup, you have to know it may fail. It is a game in which we all agree to this, including investors. We have business hypotheses and we test them; some fail. If everything systematically fails, you have to ask yourself whether it makes sense to continue. [R28]

> The birth of my child made me realize that I needed greater flexibility. I wanted to decide for myself how much time I spend with my daughter and when I work, which is why I started thinking about opening my own bar. [R37]

> Running a startup is, for me, an extreme emotional rollercoaster. On the one hand you win a competition, receive funding, everyone says it is great, and on the other hand you know that the market and the first big client will verify everything anyway. (…) In the startup world everyone pretends everything is great, because they have to. There is no space for saying: I have problems, something didn't work out. Entrepreneurial life, for me, is moving from one failure to another with short moments

> of success. I am no longer ashamed to say that something failed, this is what the job looks like. [R13]
>
> My family used to say: fine, fine, do it, but you will also have a normal job, right? [R26]
>
> I had the comfort of knowing that my parents would not abandon me or let me starve… but at the same time I would feel terrible if I had to ask them for help. [R22]
>
> Is an entrepreneur independent? That is not true… when you are an entrepreneur you depend on a much larger group of contractors and suppliers. [R34]
>
> The pandemic was the engine and driving force of this board game—the lockdown forced people to spend time with their families, which accelerated the development of the idea for the game despite the overall drop in the company's turnover. I realized that for me this lockdown was somewhat of a business opportunity… everyone froze their budgets, but I prepared educational materials for clients—which led to the return of clients and new contracts. [R9]

An important counterpoint to corporate experiences among some entrepreneurs is the strongly emphasized need for autonomy. Respondents repeatedly stress that the ability to make independent decisions constitutes one of the main benefits of entrepreneurial activity. Autonomy is indeed one of the key factors of intrinsic motivation and well-being at work (Deci, Ryan, 2000), as well as one of the strongest predictors of entrepreneurial satisfaction, even in conditions of higher risk and responsibility (Benz, Frey Bruno, 2008). The respondents perceive entrepreneurship as a tension between the need for independence and the influence of the social environment, particularly family, which simultaneously serves as a source of support and normative pressure (Aldrich, Cliff, 2003). Respondents also challenge the myth of entrepreneurial autonomy, emphasizing the structural dependence of entrepreneurs on clients, suppliers, and market conditions, which aligns with network-based perspectives on entrepreneurship (Hoang, Antoncic, 2003). Experiences related to the COVID-19 pandemic reveal entrepreneurship as highly dependent on external phenomena that simultaneously generate threats and new business opportunities, confirming the adaptive and opportunistic nature of entrepreneurial action under crisis conditions (Kuckertz et al., 2020). Institutional regulations and market uncertainty therefore make entrepreneurship appear not as a state of full independence but rather as a process of continuously negotiating autonomy in relation to the environment.

Expectations vs. Reality – The Paradox of Illusions. Entrepreneurs in the early stages of their activities are characterized by enthusiasm, which is later verified by reality.

> At first I thought this business was a golden shot, and later that it was a complete failure and nobody would want to use it. (…) That's what I like about being an entrepreneur—if I feel I should slow down, I just take time off. But on the other hand, these decisions are crucial and difficult to reverse. [R26]

> If I once had some trust in the government or public institutions, I have now reached a point where my trust… Whatever is said by any representative of the broadly understood government is absolutely zero. [R15]
>
> We cannot afford to hire anyone, so we do everything ourselves. Sometimes our nights are so sleepless that the children start moving in their beds and we are only just going to sleep. (…) We had to invest all our savings to make the offer more attractive… but we had no idea how long the pandemic would last or whether customers would buy anything at all. [R3]

The respondents' statements illustrate a process of transition from initial optimism to a more realistic evaluation of entrepreneurial activity, in which enthusiasm is verified through market experience. The literature indicates that excessive optimism and belief in a "golden opportunity" are typical for the early stages of entrepreneurship, and their correction constitutes an element of the learning process and the reduction of cognitive biases (Hayward et al., 2006). Respondents also reveal a loss of trust in public institutions, which reinforces the necessity of relying on one's own resources and decisions under conditions of uncertainty. The statements also emphasize awareness of the personal and financial costs of decisions, confirming the central role of risk and responsibility in entrepreneurship (McMullen, Shepherd, 2006).

5. Conclusions

The analysis of the experiences of the surveyed entrepreneurs shows that starting one's own business, regardless of previous professional experience, is associated with a profound redefinition of work, responsibility, and autonomy. Regardless of their corporate experience, entrepreneurs indicated that autonomy in business entails intensive work, continuous adaptation, and responsibility for risk and decision-making. In both groups, self-employment does not reduce burdens but rather transforms them into other, more demanding and uncertain forms.

The central conclusion is the paradox of autonomy: entrepreneurs value the possibility of making independent decisions and relying on their own judgment; however, they remain dependent on clients, suppliers, legal regulations, and unpredictable external phenomena such as the COVID-19 pandemic. Autonomy is not absolute but negotiated within networks of dependencies and conditioned by the surrounding environment, which requires entrepreneurs to constantly balance freedom and risk.

The process of verifying initial optimism constitutes another important element of the entrepreneurial experience. Early enthusiasm and belief in rapid success gradually give way to a more realistic assessment of market opportunities, personal costs, and institutional constraints. The loss of illusions regarding public institutions and the necessity of relying on one's own

resources strengthen awareness of risk and the irreversible consequences of strategic decisions, which is typical of the early stage of entrepreneurship and the entrepreneurial learning process (Hayward, Shepherd, Griffin, 2006; McMullen, Shepherd, 2006).

Despite the high financial, emotional, and family-related costs, entrepreneurship provides a sense of meaning, agency, and the possibility of acting in accordance with one's own values. Working "for oneself" is perceived as more authentic and meaningful than working within hierarchical structures, and the possibility of exerting a real influence on one's environment constitutes an important motivator. The paradox of autonomy does not lead to its negation but rather to its redefinition: autonomy consists in the conscious management of dependencies.

The study is based on a qualitative sample of 40 entrepreneurs, which provides rich insights into individual experiences but limits the generalizability of the findings. The results should therefore be interpreted as exploratory and illustrative rather than representative of the broader population of entrepreneurs. Although the qualitative approach enabled an in-depth understanding of how entrepreneurs experience and negotiate tensions between autonomy and risk, the relatively small and context-specific sample may not capture the full diversity of entrepreneurial contexts. Future research could extend this analysis by employing larger samples and quantitative methods that would allow for testing the identified patterns across a broader population. Comparative studies conducted across different countries and institutional contexts could also provide valuable insights into how cultural, regulatory and economic environments influence the paradox of autonomy in entrepreneurship.

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TOWARDS A CONCEPTUALIZATION OF ERGONOMIC MATURITY IN ENTERPRISES: A LITERATURE REVIEW

Marcin BUTLEWSKI

Poznań University of Technology; marcin.butlewski@put.poznan.pl, ORCID: 0000-0002-2663-4082

Purpose: The aim of this article is to conceptualize the notion of enterprise ergonomic maturity and to identify its key dimensions.
Design/methodology/approach: This article is based on a systematic literature review covering ergonomics management and organizational maturity. The analysis was qualitative and conceptual in nature. Drawing on the selected publications, the study identifies, organizes, and synthesizes the key areas that contribute to an organization's ergonomic maturity.
Findings: The results indicate that ergonomic maturity is a multidimensional construct encompassing such areas as leadership, organizational culture, employee participation, ergonomic design, risk assessment, organizational learning, and a systems approach.
Research limitations/implications: The article is conceptual in nature, which means that the dimensions of ergonomic maturity proposed here have not yet been empirically validated. Future research should focus on examining individual dimensions of ergonomic maturity and assessing their relevance in companies pursuing Industry 5.0 implementation, particularly from the perspective of human-centered production systems.
Practical implications: The proposed concept may serve as a starting point for the development of diagnostic and auditing tools supporting the assessment of the level of ergonomic development within an enterprise. It may also assist managers in integrating ergonomic requirements into work design, production organization, and the improvement of management systems.
Social implications: The development of ergonomic maturity in enterprises may contribute to improving employees' quality of life, enhancing safety, and reducing physical and cognitive strain in the work environment. This is particularly important in the context of digital transformation and the growing use of artificial intelligence, which increase the need to design production systems that are more human-centered, socially responsible, and oriented toward long-term human well-being.
Originality/value: The value of this article lies in organizing the fragmented body of literature and proposing a coherent approach to enterprise ergonomic maturity and its key dimensions discussed in previous studies.
Keywords: ergonomic maturity, enterprise ergonomics, Industry 5.0, human-centered orientation.
Category of the paper: Literature review.

1. Introduction

In contemporary enterprises, ergonomics is no longer perceived solely in terms of workstation design, the reduction of awkward postures, or compliance with minimum physiological requirements. Instead, it is increasingly approached from a systemic perspective consistent with macroergonomics, emphasizing the design and improvement of processes across the organization as a whole (Hendrick, Kleiner, 2002). From this viewpoint, ergonomics is closely linked to the human factor (HF) and constitutes an important foundation for building organizations that address human needs in a deliberate and responsible manner (Butlewski, 2026). Organizations that incorporate ergonomics into management practice may achieve benefits that extend far beyond the prevention of work-related musculoskeletal disorders (WRMSDs). Previous studies indicate that ergonomics may enhance productivity (Elvis Campos Naval et al., 2025), support the development of competitive advantage (Dul, Neumann, 2007), foster innovation and organizational success (Islam et al., 2025), improve employee well-being and efficiency (Butlewski, 2020; Sisodia, Zaini, 2025), and strengthen workplace safety (Stoidner et al., 2023). Furthermore, the systematic integration of ergonomics into organizational practice may generate operational, organizational, and strategic benefits while also supporting broader objectives, including sustainable development (Butlewski, Broda, 2025).

Nevertheless, in managerial practice ergonomics remains too often confined to occupational health and safety activities and is rarely embedded in the broader logic of organizational development and management systems. This gap points to the need for conceptual frameworks that allow organizations to assess their current level of advancement, identify improvement priorities, and benchmark their practices. In this regard, maturity models appear to offer a promising approach to evaluating the development of ergonomics within enterprises.

Accordingly, the aim of this article is to conceptualize enterprise ergonomic maturity and to identify its principal dimensions on the basis of a literature review. The article assumes that ergonomics should not be treated merely as a set of operational activities or workstation-level interventions, but rather as a component of a broader organizational management system. Against this background, the study addresses the question of how enterprise ergonomic maturity may be defined and structured, particularly in terms of its dimensions, criteria, and maturity levels.

2. Materials and methods

This study employed a systematic literature review conducted in accordance with PRISMA guidelines. The search was carried out in the Scopus and Web of Science Core Collection databases using a two-block search strategy. The first block comprised terms related to ergonomics and human factors, including the systems approach, macroergonomics, and the concept of human-centered organizations. The second block comprised terms associated with maturity models, assessment frameworks, organizational diagnosis, organizational development, and excellence models, given their frequent co-occurrence and conceptual proximity in the literature. Search queries were developed using OR and AND operators and were limited to titles, abstracts, and keywords. Wildcards were applied to capture different terminological variants. Overall, the search strategy combined concepts from the field of ergonomics and human factors with terms referring to maturity models, organizational capabilities, excellence, and assessment frameworks. The review included publications in which Human Factors/Ergonomics (HF/E) represented a substantial element of organizational assessment or was explicitly connected with management practices, particularly in relation to work system design, process management, and integrated management systems. Studies in which ergonomics appeared only incidentally or played a marginal role were excluded. The quantitative results of the review are presented in Table 1.

Table 1.
Quantitative results of the individual stages of the systematic literature review

Reduction levels	Scopus	Web of Science
Number of records identified	193	158
Number of records after removing duplicates	239	
Number of records analyzed (title and abstract)	239	
Number of full-text articles assessed for eligibility	33 (including 3 in Spanish)	
Number of detailed records assessed in the full version (found)	30	
Number of studies included in the review and operationalization of the presented concepts	13	

Source: own elaboration.

3. The concept of enterprise ergonomic maturity

Enterprise ergonomic maturity can be conceptualized as a multidimensional characteristic reflecting the extent to which ergonomics is recognized, accepted, institutionalized, and embedded in the organization's overall management logic (Ruíz, Mergarejo, 2019). It should not be understood merely as the implementation of isolated ergonomic solutions or as a series of ad hoc responses to occupational health and safety problems. Rather, it denotes a level of organizational development at which ergonomics becomes an enduring component

of strategic thinking, work design, operational management, and organizational culture. From this standpoint, ergonomic maturity begins with the recognition of ergonomics as a meaningful managerial and organizational principle. In organizations characterized by such an orientation, ergonomics is incorporated into management processes, work system design, and continuous improvement efforts. Its essence lies in the organization's ability to systematically address the interrelationships among people, tasks, technologies, the work environment, and organizational structures, thereby treating ergonomics as a property of the enterprise as a socio-technical system. The literature suggests that organizations with higher levels of ergonomic maturity not only understand the problem-solving potential of ergonomics (Ruíz, Mergarejo, 2019), but also acknowledge the need for its systematic application, develop relevant competencies, establish responsibility structures, allocate resources, conduct ergonomic risk assessments, and monitor the effects of ergonomic interventions (Chinda et al., 2021; Edmonds, 2019; Rodríguez et al., 2022; Vidal et al., 2012). Importantly, they also use the outcomes of these activities to support further organizational improvement. In this sense, ergonomic maturity emerges when ergonomics becomes both a durable organizational capability (Reiman et al., 2021) and a component of organizational culture (Chinda, 2021), supporting employee well-being as well as organizational effectiveness. This understanding may be further reinforced by the human-centric ergonomic axiom, according to which ergonomics is grounded in the simultaneous pursuit of human fit, optimal system performance, and employee well-being (Butlewski, 2018). Enterprise ergonomic maturity may therefore be defined as the degree of organizational advancement in the institutionalization, integration, evaluation, and continuous improvement of Human Factors/Ergonomics (HF/E) within management systems, organizational structures, operational practices, and organizational culture. Consequently, an ergonomic maturity model reflects the extent to which ergonomics is implemented in a planned, systematic, and monitored manner, with due consideration given to strategy, resources, competencies, responsibilities, indicators, risk assessment, and employee participation (Chinda et al., 2021; Edmonds, 2019; Rodríguez et al., 2022; Vidal et al., 2012).

4. Dimensions of enterprise ergonomic maturity

An analysis of the identified publications indicates that enterprise ergonomic maturity can be considered across dimensions operating at the conceptual, structural, strategic, cultural, process, competency, technological, and outcome levels (Neves et al., 2023; Ródriguez Ruiz et al., 2012). Accordingly, ergonomic maturity should be understood as a complex organizational characteristic that needs to be developed across multiple organizational functions and domains.

Some authors therefore refer to dimensions typical of general organizational maturity models, such as leadership, management commitment, strategic alignment, resource allocation, competencies, process orientation, monitoring, and continuous improvement (Páez et al., 2018; Santos-Neto, Costa, 2019). In this sense, enterprise ergonomic maturity may be interpreted as a specific manifestation of broader organizational maturity. At the same time, however, the literature indicates that the assessment criteria should also reflect the substantive specificity of ergonomics as a field of practice and knowledge.

In macroergonomic approaches, maturity is assessed with reference to whether ergonomics is culturally accepted within the organization, whether competent ergonomic practitioners are available, and whether the organization has appropriate oversight and feedback mechanisms in place (Páez et al., 2018; Rodríguez et al., 2022). Ergonomic maturity models also include criteria related to risk identification capabilities, design and implementation competencies, responsibility for the implementation of solutions, and motivational mechanisms supporting their long-term sustainability (Ruíz, Mergarejo, 2019). A similar interpretation can be found in studies on macroergonomic organizational factors, in which maturity development is associated with building consistency between the organizational system, employee competencies, and working conditions (Realyvásquez Vargas et al., 2016). A dimension that is particularly specific to ergonomics is employee participation (Pérez et al., 2021), including the incorporation of employee experience and the collaborative prioritization of changes, both of which are characteristic of participatory and user-centered approaches. Employee experience is treated as an important condition for accurate diagnosis and effective intervention (Kogi, 2006).

Another group of criteria relates to monitoring, indicators, and supervision, which play a particularly important role in ergonomic maturity models. In classical maturity models, monitoring is usually intended to control processes, measure outcomes, and support improvement. In the context of ergonomics, however, it takes on a more specialized form, encompassing information systems as well as ergonomic indicators related to workloads and adverse events (Chinda et al., 2021). In ergonomic maturity models, the surveillance dimension is treated as one of the core pillars of assessment, which suggests that an ergonomically mature organization should not only implement solutions, but also possess the capability to observe, document, and evaluate their effects (Rodríguez et al., 2022). Health surveillance systems and contemporary ergonomic risk assessment methods further strengthen this organizational capability, indicating that the development of monitoring tools substantially advances this dimension of maturity (Butlewski et al., 2025; Mollabagher et al., 2026; Scataglini et al., 2025). The identified and organized dimensions are presented in Table 2.

Table 2.
Dimensions of enterprise ergonomic maturity and their characteristics

Dimension of ergonomic maturity	A characteristics and subcomponents of a dimension
Ergonomic culture	It encompasses the level of acceptance of ergonomics within an organization, the willingness to recognize its importance to the functioning of the enterprise, the development of cooperation and teamwork, and the building of attitudes that encourage employee participation in identifying and resolving ergonomic problems. Ergonomics is viewed as a way of thinking about work, productivity, and well-being.(Ródriguez Ruiz et al., 2012; Ruíz, Mergarejo, 2019)
Strategic and management integration	It addresses the degree to which ergonomics is linked to a company's strategy, management system, policies, management decisions, and development planning. It encompasses criteria such as strategic alignment , formalization of ergonomics management, management commitment, incorporating ergonomics into organizational and design decisions, and anchoring it firmly in company structures and procedures.(Earthy et al., 1999; Poghosyan et al., 2020; Ródriguez Ruiz et al., 2012; Vidal et al., 2012)
Resources and organizational support	It encompasses the availability of resources necessary to conduct ergonomic activities, including human, financial, technical, information, and infrastructure resources. This dimension reflects whether the organization creates realistic conditions for implementing ergonomics, providing tools, time, expert and program support, and organizational resources enabling the continuous and planned development of ergonomic activities.(Rodríguez et al., 2022; Ruíz, Mergarejo, 2019)
Competencies and contractors	It refers to the level of knowledge, skills, experience, and training of those responsible for implementing ergonomics. It encompasses specialist competencies, role assignments, responsibilities, professional development, training, access to advice, and the ability to collaborate among various participants in the ergonomic design and improvement process. The organization has people capable of implementing ergonomic design in practice.(Edmonds, Gray, 2019; Poghosyan et al., 2020; Ródriguez Ruiz et al., 2012)
Responsibility and leadership	This dimension encompasses the existence of clearly defined roles and responsibilities in the area of ergonomics. This includes both the formal designation of individuals responsible for ergonomics and its dimensions, as well as effective support from management, which gives ergonomics activities organizational importance, ensures their continuity, and strengthens a culture of responsibility for people and the work system.(Pérez et al., 2021; Ruíz, Mergarejo, 2019)
Participation and cooperation	It indicates the degree of involvement of employees and users of work systems in identifying problems, co-creating solutions, and assessing their effectiveness. This dimension emphasizes both participation mechanisms and practices of interdisciplinary and interorganizational collaboration. Ergonomic maturity assumes that users are not merely recipients of changes but co-participants in their design and implementation.(Rodríguez et al., 2022; Suarez Noto, Narino Lescay, 2018)
Ergonomic design and human-centered design	It encompasses an organization's ability to consider human characteristics, needs, and limitations in the design of jobs, tools, procedures, technologies, and entire work systems. The criteria for this dimension relate to the practical application of human-centered design principles, consideration of users, tailoring solutions to people , and integrating efficiency requirements with safety and well-being requirements.(Edmonds, Gray, 2019; Suarez Noto, Narino Lescay, 2018)
Ergonomic risk assessment	It concerns an organization's ability to identify ergonomic hazards, analyze their sources, assess workloads and risks, and incorporate the results of these analyses into improvement actions. This dimension includes recognizing problems related to posture, physical workload, work organization, fatigue, procedures, and human-technology interaction.(Pérez et al., 2021; Ródriguez Ruiz et al., 2012; Rodríguez et al., 2022)
Indicators, monitoring and information systems	This includes the use of ergonomic metrics, data collection, the development of decision-support information systems, and monitoring the results of ergonomic activities. An ergonomically mature organization has the ability to implement interventions, track them, document them, and utilize the information in management and reporting processes.(Edmonds, 2019; Rodríguez Ruíz, Pérez Mergarejo, 2016; Rodríguez et al., 2022)

Process and regularity of ergonomics application	This dimension refers to whether ergonomics is used occasionally or is programmatic, regular, and systematic. It encompasses planning activities, sequential implementation, reviewing, maintaining results, and developing procedures to ensure the sustainability of the ergonomic approach. Maturity increases when ergonomics ceases to be a reaction to incidents and becomes part of the cyclical management of the organization.(Chinda et al., 2021; Rodríguez Ruíz, Pérez Mergarejo, 2016)
Organizational learning and continuous improvement	It encompasses an organization's ability to learn from assessments, interventions, incidents, project experiences, and best practices, and then use these lessons to improve work systems. In this dimension, ergonomics becomes part of organizational learning, and maturity assessments are used to determine priorities, action plans, and development directions.(Edmonds, 2019; Rodríguez et al., 2022; Vidal et al., 2012)
Macroergonomic and systemic perspective	It means approaching ergonomics at the level of the entire sociotechnical system, taking into account the interconnections between people, technology, tasks, the environment, and the organization. This dimension indicates that ergonomic maturity is not limited to workstations but encompasses the holistic design and improvement of organizational systems in a way that supports both human well-being and system performance.(Pacholski, Szczuka, 2018; Reiman et al., 2021; Rodríguez et al., 2022)

Source: own elaboration based on the literature review.

The identified categories of ergonomic maturity provide a conceptual foundation for further research on the shaping of ergonomic maturity in organizations and for the development of models of progression toward maturity.

5. Summary

The analysis undertaken in this article enabled the concept of enterprise ergonomic maturity to be organized on the basis of the existing literature and its principal dimensions to be identified, including leadership, organizational culture, employee participation, ergonomic design, risk assessment, monitoring, organizational learning, and a systems perspective. Nevertheless, the proposed framework remains conceptual and therefore requires empirical verification. Future research should focus on examining the individual dimensions of ergonomic maturity and evaluating their adequacy in specific organizational settings. This is particularly relevant in enterprises implementing the assumptions of Industry 5.0, where the importance of human-centered work system design, human–technology integration, and the development of production environments combining efficiency with employee well-being continues to increase. There is also a clear need for empirical studies addressing the benefits achieved by organizations that seek to develop ergonomic orientation or, more broadly, human-centricity (Butlewski, 2026). Such studies may help establish a more realistic framework for the implementation of these approaches and provide evidence of their effectiveness in organizational practice (Hamel, Zanini, 2020).

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SOCIAL FACTORS INFLUENCING THE INNOVATION CLIMATE IN ENTERPRISES

Felicjan BYLOK

Czestochowa University of Technology; felicjan.bylok@pcz.pl, ORCID: 0000-0001-5305-8634

Purpose: The identification and evaluation of the social circumstances of the innovative climate in enterprises of the innovative sector, particularly with regard to the role of department heads in terms of its formation, while also the significance of the level of involvement of employees in the level of innovative climate.
Design/methodology/approach: The data was collected within the framework of a nationwide research project with the use of the method of a phone interview aided by computer techniques (CATI) conducted on 575 employees of the pharmaceutical, energy, automotive and IT sectors. The research encompassed the evaluation of the components of the innovative climate, while also the impact of managerial leadership and level of involvement of employees.
Findings: Research findings have indicated that the innovative climate is relatively high, while a key role is played by the department heads by way of strengthening the vision, motivating the team and supporting cooperation. The dependency between the innovative climate and the level of involvement by the employees is intricate and intensive innovative practices may reduce the feeling of participation in some areas. The findings emphasize the need to balance the innovative requirements with adequate organizational support with the aim of long term strengthening of the innovative potential.
Research limitations/implications: The limitation of the research is connected with its cross-sectional nature which does not allow for an unambigious conclusion relating to the cause-effect relationship between the innovative climate, the role of department heads and the level of involvement of employees. The findings are based on the declarations of respondents, which may be associated with subjectivity in terms of the evaluation, while also the risk of error in the joint method of measurement.
Practical implications: The research findings indicate the necessity to strengthen the role of department heads as leaders of change, while also develop the communication and mentoring competences, as well as supporting the autonomy of employees.
Social implications: The research illustrates that the development of the innovative climate based on supporting leadership and involvement strengthens the adaptive abilities with regard to dynamic change within the organization.
Originality/value: The originality of the research involves an intricate notion of the social circumstances of the innovative climate by means of the simultaneous role of department heads, while also engaging the employees in enterprises of the innovative sectors. Such an approach brings cognitive value by integrating the leadership perspective, team relations and motivating mechanisms in one analytical model.
Keywords: innovative climate, organizational involvement, manager, enterprise.
Category of the paper: Research article.

1. Introduction

Innovativeness is becoming a key factor in terms of competitive advantage and long-term development of the organization. However, the level of innovativeness does not entirely depend on the technical or financial resources, but to a large extent on the social factors in existence in the organization. One of these is the organizational culture based on innovative behaviour that favours openness, freedom of activity, execution of new ideas, tolerating risk or openness to changes that are essential to develop the innovative behaviour of the employees. Part of the organizational culture is that of the innovative climate, which is seen as the perception by the employees of an environment that favours creativity, experimentation and implementation of new ideas.

Although the concept of innovative climate has been widely discussed, it is often analysed as an outcome rather than as a phenomenon shaped by everyday interactions between employees and managers. Similarly, although employee engagement is commonly associated with job performance and commitment, its role in shaping the innovative climate remains insufficiently explored. Moreover, research on leadership and innovation has mainly focused on top management, while the influence of department heads and middle-level managers on shaping the innovative climate has received less attention.

This study addresses these gaps by integrating three perspectives: innovative climate, employee engagement, and the role of department heads in shaping the social conditions of innovation**.** By focusing on enterprises operating in innovative sectors, the research contributes to a better understanding of how social and organizational factors interact to support innovative behaviour and the development of new ideas.

Therefore, the research objective was formulated as the identification and evaluation of the social determinants of the innovative climate in enterprises operating in innovative sectors, with particular emphasis on the role of department heads in shaping it and the significance of employee engagement for the level of innovative climate.

On the basis of the adopted research aim, the following three questions were formulated: To what extent does the innovative climate exist in enterprises of innovative sectors? To what extent do department heads exert influence on the innovative climate? To what extent does the level of involvement of the employees have an impact on the innovative climate?

2. Innovative climate in organizations

Modern-day organizations function in conditions of dynamic technological, social and market changes that force the constant search for new solutions, while also the enhancement of ways of conducting activities. Innovativeness is therefore becoming not only the source of competitive advantage, but also the condition for long-term development and the survival of the organization. A key role in this process is played by the working environment which may both stimulate and hinder the creative activity of the employees. Organizational culture is of particular significance here, while also the innovative climate formed within its framework that determines the level of involvement, creativity and readiness to undertake innovative initiatives.

The climate of innovation is a type of strategic organizational climate. It may be described as the combination of the environment of the organization as perceived by the employees, which supports risky behaviour, while also allocating a sufficient amount of resources and promoting a competitive environment that favours innovations at work (Malibari, Bajaba, 2022). The innovative climate is associated with the performance of the organization, such as the better implementation of ideas, greater innovativeness and also general benefits, e.g. the level of satisfaction of the employees (Aarons, Sommerfeld, 2012).

The innovative climate in an organization brings multiple benefits. A favourable organizational climate has a direct positive impact on the innovative behaviour of the employees, while also an indirect impact by way of engaging the team and work itself, while simultaneously the indirect effect is stronger than the direct effect (Song, Inmor, Cuijten, 2024). Its significance results from the fact that it supports undertaking innovative initiatives and promotes highly valued ideas at each level of management (Puni, Hilton, Mohammed, Korankye, 2022). This creates a friendly environment that facilitates undertaking calculated risks, constant learning, while also effective implementation of innovations (Do et al., 2022) and influence on the creative behaviour of the employees (Pham, Le, 2024), as well as stimulating the organizational innovativeness (Le et al., 2024).

The level of the innovative climate in an organization depends on a multitude of factors. Newman, Round, Wang, Mount (2020), split them into individual ones associated with employees, namely, experience, education, skills, demographic data and the level of stress, while also organizational ones, namely, openness, autonomy, organizational support, practices of human resources management and transformational leadership.

A significant individual factor is that of the level of involvement of the employees, which is defined as the state of complete self-activation and mechanism of transforming incentives into the attitudes and behaviour desired by the organization (Schneider et al., 2018). The research conducted by Lin (2016) confirmed the positive correlation between the innovative climate and the organizational involvement. The latest research illustrates that organizational involvement is an important indicator of innovative behaviour and work efficiency (Park, Hwang, 2015). Furthermore, it is the basis for the positive attitudes amongst the employees with regard to their work and is a key determinant of the innovative activities

(Zeng, Song, 2025). Sanamthong and Prabyai (2023) illustrated that a highly involved workforce is more likely to actively discover new ideas and methods with the aim of solving organizational problems.

The organizational factor that has an impact on the innovative climate is that of leadership. Research shows that the activities of managers shape the innovative climate in an organization (Lecic et al., 2023). What is particularly important is the creative leadership abilities that have a positive impact on the innovative behaviour of the employees (Ye, Liu, Tan (2022). One of the types of leadership that strengthens the innovative climate is that of the transformative leadership, which, amongst other things, increases the level of enthusiasm of the employees with regard to innovations, which in turn favours the development of innovativeness. Research has shown that individual and concentrated transformative leadership has a positive impact on the innovative behaviour of the employees, while the identification with the leader fulfils a significant intermediary role in this process. The innovative climate of the team also moderates the relation between the identification with the leader and the individual innovative behaviour, by emphasizing its role as the condition that favours the generation and implementation of new ideas (Wang, Park, Kim, 2025). Transformative leaders have an impact on the organizational innovations by way of implementing new ideas, defining aims and encouraging employees to have initiatives, integrating creativity, resilience, energy and knowledge with the aim of increasing both the quality of products, as well as the processes (Kartono et al., 2021).

In sum, innovativeness in organizations is not the result of random activities, but the effect of consciously shaped working culture and climate. The involvement of employees and inspiring leadership create an environment in which ideas may be developed, while innovations may be implemented. The creation of such a climate is thus becoming a key element in terms of building competitive advantage and long term development of the organization.

Although organizational innovativeness has been widely studied, less attention has been paid to the social determinants of the innovative climate in organizations. Previous research has mainly focused on technological resources and strategic factors, while the role of social mechanisms shaping the innovative work environment remains insufficiently explored. This study addresses this gap by integrating three perspectives: innovative climate, employee engagement, and the role of department heads in shaping the social conditions of innovation. By focusing on enterprises operating in innovative sectors, the study contributes to a better understanding of how social and organizational factors support innovative behaviour and the development of new ideas.

The originality of the theoretical section lies in integrating research on innovative climate with employee engagement and leadership, emphasizing the social determinants of organizational innovativeness and linking them with the specific context of enterprises operating in innovative sectors.

3. Research methods

The CATI survey method (Computer Assisted Telephone Interview) was applied in the research and the research tool was a standardized survey questionnaire. The research was of a nationwide nature and the subject matter of research was that of companies employing over 50 people. On the basis of random selection, a research sample consisting of 575 employees working in enterprises of the innovative sectors was built, namely in sectors such as pharmaceutical (25.2%), energy (23.3%), automotive (26.4%) and IT (25%) (Bylok, 2024).

For the purpose of analysing the innovative climate and the factors that have an impact on its level in enterprises of the innovative sectors, research tools were created on the basis of the existing subject-related literature. All the scales were measured with the aid of multi-elemental reflective scales by availing of a five-level Likert scale (1 = I totally disagree, 5 = I totally agree).

4. Research findings

In an enterprise geared towards the creation of innovations, the factor which favours their formation is that of the climate of innovativeness which supports, amongst other things, openness to new concepts, new ideas, while also the creation and sharing of knowledge. With the aim of defining its level, a scale was applied that consists of 18 statements built on the basis of a modified version of the Krot and Lewickiej scale (2016). The results indicate a clearly positive evaluation of innovative culture in the organization under analysis (Table 1). The highest indicators in terms of responses were observed in the area of strategic circumstances and the significance of innovations in the organization (75% of evaluation were high or very high), particularly in the case of the existence of cohesive aims of development of innovative undertakings and the ease of access to information relating to the mission and principles of innovation. This certifies to the strong embeddedness of innovativeness in the strategies of an organization, while also effective communication with regard to its significance.

The high values in terms of the responses were also observed in the case of innovative leadership and managerial support (75% of high indicators), particularly with regard to accepting risk associated with innovations and support for employees who search for new solutions. These results indicate a favourable leadership climate.

A significant element of the innovative climate is that of innovative and entrepreneurial competences (74% of high indicators). The highest indicators of positive responses were noted in the following areas: expectation of enhancement of skills and increasing knowledge, expectation of creativity, as well as innovatory activities, while also granting aid to employees

from other departments. This indicates that the organization is not only declaring the significance of innovation, but also promoting the development of competences and active attitudes of employees as the condition for the execution of this.

In the case of the element of organizational cooperation and flow of knowledge, slightly lower results were attained (71% of high indicators), albeit they are still high indicators, particularly relating to the creation of conditions for cooperation between departments, while also the utilization of the creativity of employees with the aim of achieving a profit and the opportunity to use untypical solutions in everyday work. The greater share of the neutral responses to these questions may suggest that the practical dimension of cooperation and creative freedom is less explicitly assessed than strategic declarations.

In the case of attitudes relating to risk and errors in innovative activities (71% of high indicators), a relatively higher acceptance of risk associated with innovations than the adherence to innovative processes was observed in the context of the possibilities of errors, which signifies openness to potential risk.

In the area of the element of barriers and tension in innovative culture, the percentage of positive responses is still high (64% of high indicators), yet they are the lowest values of the whole set of data. This may indicate the existence of operating pressure, while also certain interpersonal tension, which could potentially hinder full use of the innovative potential.

Hence, it is possible to conclude that employees in most cases perceive the working environment as being favourable to innovations.

Table 1.
Indicators of innovative climate in percentage form

Dimension	Indicator	Type of answer		
		1+2	3	4+5
ICS Strategic conditioning and significance of innovations in an organization	ICS1 Ease of access to information, (mission, aims, principles relating to innovation)	1,2	24,2	74,6
	ICS2 Existence of cohesive aims of development of innovative undertakings	5,2	19,1	75,6
	ICS3 Conviction that innovations are key values	3,8	21,7	74,4
	ICS4 Open communication with employees about expectations regarding innovativeness on part of managers	2,8	21,4	75,8
	ICS5 Encouragement of department heads by their superiors to take risks and take opportunities to develop the company	3,8	21,4	74,7
ILM Innovative leadership and managerial support	ILM1 Accceptance by department heads of new ideas proposed by employees	5,4	19,7	75
	ILM2 Support of employees in search of novel solutions	0	22,8	77,2
	ILM3 Aid for managers in breaking barriers for implementing innovations	0	28,2	71,8
	ILMI4 Large scale autonomy for project head	0	20,3	73,4
	ILM5 Granting aid to employees from different departments in creation of innovations	1,4	20	78,6
	ILM6 Organizational acknowledgement of employees that create new solutions	4,0	20	76

Cont. table 1.

IEC Innovative and entrepreneurial competences	IEC1 Expectation of enhancement of skills and increase in knowledge	2,4	19	78.6
	IEC2 Expectation of creativity and novel activity	1,2	20,2	78,6
	IEC3 Expectation of initiative at work	4,0	27,1	68,9
	IEC4 Expectation of flexibility and rapid adaptation to change	1,4	28,2	70,4
	IEC5 Encouragement to accept challenges brings benefits	3,8	21,6	74,6
	IEC6 Skill of transforming ideas into profitable undertakings	2,6	20,2	77,2
OCK Organizational cooperation and knowledge flow	OCK1 Easy access to information and knowledge	2,6	20,2	77,2
	OCK2 Creation of conditions for cooperation between sections/departments	1,4	29,6	69.1
	OCK3 Availing of suggestions of clients in enhancing products	3,7	24,3	72
	OCK4 Identification of individual contribution of employees in innovative projects	9,2	23	68
	OCK5 Utilizing creativity of employees in generating economic value	5	28,5	66,4
ARM Attitudes towards risk and mistakes in innovative activities	ARM1 Perception of innovative processes as being connected with risk and possibility of mistakes	5,2	25,9	68,9
	ARM2 Acceptance of risk associated with innovations	1,2	23,8	75
BIC Barriers and tension in innovative culture	BIC1 Excessive burden of current tasks that limit level of involvement in innovative activities	9,2	28,5	62,3
	BIC2 Existence of envy towards success of co-workers	8	24	68,2
	BIC3 Restricted freedom to express non-standard solutions	2,6	34,1	63,4

Scale: 1- I totally disagree, 2 – I disagree, 3 – I neither agree nor disagree, 4 – I agree, 5 - I totally agree.

Source: Self-analysis.

Department heads have an impact on the level of the innovative climate. Analysis of the distribution of responses indicates a very high level of evaluation of the role of the department heads in terms of building the innovative climate (Table 2). One of the factors in building the innovative climate is that of strategic leadership and the vision of the development of the enterprise (78.9% of high indicators). The lowest indicators were attained with relation to decision making on the basis of principles and values, while also the perception of conflict as a constructive phenomenon, as well as the formation of an organization by means of a vision and its translation into strategies.

A further factor is that of the motivating and strengthening of employees (77.1% of high indicators). Public appreciation of creative efforts and implementation of systems of rewards strengthen the motivation of the team towards the further search for new solutions. Very high indicators were noted for statements relating to the motivating role of department heads and gaining potential from employees by means of strengthening them in the execution of tasks, while also building and maintaining good relations with subordinates.

An important factor as an element of the innovative climate is the inclusion of differentiation and organizational values (77.2% of high indicators) which involves translating declarations into specific systems and behaviour that create the culture of belonging.

Another equally important factor stimulating the innovative climate is that of the communicative competences of the department head (73.2% of high indicators). These high values, albeit lower than in the previous areas, were noted in the sphere of interpersonal communication as a factor that arouses effectiveness, the skill of listening to and calming others, while also searching for and utilizing feedback.

Table 2.
Role of department heads in development of innovative climate in percentage form

Dimension	Indicator	Type of answer		
		1+2	3	4+5
SLV Strategic leadership and vision	SLV1- taking decisions on basis of principles and values	1,2	24,2	74,6
	SLV2 – perceiving conflict as constructive phenomenon	5,2	19,1	75,6
	SLV3 – ability to form organization by way of vision and translate to strategies	3,8	1,2	74,4
	SLV4 – implementing changes in the firm	2,8	21,4	75,8
MSE Motivating and strengthening employees	MSE1 – motivating employees and gaining potential from them	3,8	21,4	74,7
	MSE2 – strengthening employees in terms of execution of tasks	5,4	19,7	75
	MSE3 – building and maintaining good relations with subordinates	0	22,8	77,2
	MSE4 – conviction of necessity to implement innovations by department head	0	28,2	71,8
CIC Communication and interpersonal competences	CIC1 - interpersonal communication as factor that arouses effectiveness	0	20,3	73,4
	CIC2 – searching for and using feedback	1,4	20	78,6
	CIC3 – skill of listening to and calming others	4,0	20	76
IDOV Including differentiation and organizational values	IDOV1 – respect for values and differentiation	2,4	19	78.6

Scale: 1 – I totally disagree, 2 – I disagree, 3 – I neither agree nor disagree, 4 – I agree, 5 – I totally agree.

Source: Self-analysis.

In the subsequent step in research, the relations between the indicators of the innovative climate and the role of a department head in its development were analysed. In Table 3 Spearman's Correlation Coefficient has been presented with regard to the particular indicators of the innovative climate (ICS, ILM, IEC, OCK, ARM, BIC) and the various roles of department heads (SLV1-SLV4, MSE1-MSE4, CIC1-CIC3, IDOV1). The detailed analysis of relations indicates that ICS2 illustrates high correlations with SLV2 and MSE4. Likewise, IEC6 has very strong correlations with SLV4 and IDOV1 and CIC3. In turn, OLK2 is strongly associated with SLV4 and moderately so with IDOV1. However, ILM2 displays high correlations with MSE4 and IDOV1.

Simultaneously, multiple indicators of the innovative climate, e.g. IEC2, ARM1, OCK1, BIC2, illustrate very low correlations (<0,15) with the majority of the roles of department heads. This indicates that not all the elements of the innovative climate are strongly dependent on the activities of department heads as some of them may be determined by other factors, e.g. individual attitudes of employees or organizational structure.

Table 3.
Spearman's Correlation Coefficient between innovative climate (ICS, ILM, IEC, OLK, ARM, BIC) and roles of department heads (SLV, MSE, CIC, IDOV)

	SLV1	SLV2	SLV3	SLV4	MSE1	MSE2	MSE3	MSE4	CIC1	CIC2	CIC3	IDOV
ICS1		0,511		0,553				0,585		0,416	0,554	0,506
ICS2		0,627		0,466				0,576		0,313	0,542	0,365
ICS4	0,089		0,117	0,099		0,083		0,541		0,115	0,094	
ICS5		0,126	0,113									
ILM1					0,103			0,422		0,399	0,642	
ILM2			0,093					0,563	0,101			0,625
ILM3			0,094					0,500	0,455	0,295	0,576	0,480
ILM4									0,402			0,345
ILM5		0,087								0,473		
ILM6		0,087						0,604			0,490	0,464
IEC1	0,134	0,367		0,502		0103	0,507	0,507	0,108	0,362	0,381	
IEC2			0,110	0,113								
IEC4		0,267	0	0,329				0,449		0,407		0,372
IEC5			0,104								0,356	
IEC6		0,511	0,110	0,669				0,462		0,443	0,565	0,535
OCK1	0,130		0,158						0,142			
OCK2		0,414		0,605				0,394		0,324		0,582
OCK3		0,157		0,161		0,104	0,159	0,128	0,142	0,082	0,161	0,142
OCK4	0,096	0,497		0,556				0,558		0,426	0,523	0,450
OCK5	0,152	0,430		0,565	0,104			0,558	0,110	0,403	0,313	0,431
ARM1	0,146		0,112	0,113	0,095				0,097			
ARM2	0,097	0,470		0,626				0,514		0,484	0,589	0,593
BIC1			0,102	0,111								
BIC2				0,115								
BIC3			0,107		0,087	0,094			0,086			0,082

$p > 0,01$.

Source: Self-analysis.

The social factor that has an impact on the level of innovativeness of the employees is their level of involvement. The highest level of involvement relates to task support, namely, support for other employees despite the heavy workload, passing on useful information and interest in problems of other employees at the workplace.

The involvement of employees in everyday work and in replacing other employees was assessed at a lower rate, particularly in the case of voluntary support for co-workers in the workplace and replacing other employees during their absence in spite of conducting their own work duties.

The involvement of employees in terms of emotional and developmental support was rated at the lowest level, namely, devoting time to listening to the problems of employees and devoting time to teaching other employees.

Table 4.
Degree of involvement of employees in a team within last month in percentage form

Dimension	Indicator	Type of answer		
		1+2	3	4+5
TS Task support	TS1- aid in situations of great burden	7,8	39,3	52,9
	TS2 – passing on useful information	7,8	39,3	52,9
	TS3 – showing interest in problems of co-workers	25,4	28,0	46,6
	ESR1 – voluntary aid	10,3	60,9	28,8
	ESR2 – replacing absent workers	14,8	51,5	33,7

Cont. table 4.

EDS Emotional and developmental support	EDS1 – devoting time to listening to problems	33,2	51,7	15,1
	EDS2 – support in teaching other employees	29,6	50,6	19,8

Source: Self-analysis.

Scale: 5 – very large, 4 – large, 3 – moderate, 2 – sligh, 1 – lack of involvement.

From the perspective of the research aim, it would seem to be significant to analyse the relations between the indicators of the innovative climate and the level of involvement of the employees. Analysis of Table 4 indicates that the majority of indicators of the innovative climate (ICS, ILM, IEC, OCK, ARM, BIC) indicate a negative relation with the particular dimensions of involvement. The strongest negative correlation occurred between ILM6 and TS2, which indicates the relatively strong inverse correlation between the indicator of the innovative climate and the dimension of the level of involvement of passing on useful information. Apart from this, moderate correlations occurred between ILM2 - TS2, ILM3 - TS2, IEC4 - TS2 and ARM2 - TS2. Only individual indicators (ICS2, ILM3, IEC6, OLK2, ARM2) have a slightly positive correlation, which is so weak that it is difficult to refer to it as a significantly positive relation. The findings suggest that in certain circumstances a high emphasis on innovations may be connected with the reduction of subjective involvement, e.g. due to increased levels of stress or innovative pressure.

Table 5.
Spearman's Correlation Coefficient between innovative climate (KI) and level of involvement of employees (PZ)

	TS2	**TS3**	**ESR1**	**ESR1**	**EDS2**
ICS1	-0,395	-0,116			-0,114
ICS2	-0,412	-0,141		0,104	
ICS3	-0,093	-0,087			
ILM1	-0,345	-0,250		-0,097	
ILM2	-0,492	-0,297			-0,108
ILM3	-0,452	-0,159		0,095	
ILM4	-0,369	-0,356			-0,109
ILMI6	-0,514	-0,283			-0,105
IEC1	-0,384	-0,219			-0,138
IEC4	-0,444	-0,385			-0,147
IEC6	-0,364	-0,158		0,097	
OLK2	-0,340	-0,230		0,097	-0,123
OLK3	-0,120				
OLK4	-0,413	-0,204			
OLK5	-0,369	-0,132			-0,095
ARM1					-0,126
ARM2	-0,439	-0,224	0,102	0,102	-0,119
BIC2			-0,121	-0,091	

$p > 0,01$.

Source: Self-analysis.

5. Discussion and summary

In this paper social factors that determine the innovativeness of a firm have been analysed. The aim was not to clarify the final innovative performance of firms, but to identify and evaluate the social circumstances of the innovative climate in enterprises of the innovative sectors, particularly with regard to the role of department heads, while also the significance of employees in its formation. The findings of the research conducted facilitated acquiring the answers to the research questions formulated. The research indicates that in the analysed organizations the innovative climate is relatively highly rated, which confirms the presence of favourable cultural and organizational conditions in terms of the development of innovativeness. The most strongly emphasized area is that of the strategic dimension, while also the role of department heads, who by means of strengthening the vision, taking decisions on the basis of values, motivating employees and supporting cooperation have a significant impact on the formation of an environment that is favourable to creativity and the implementation of new solutions.

Analysis of the dependency between the indicators of the innovative climate and the level of involvement of the employees indicates a more intricate nature of these relations. The prevalent negative correlations suggest the intensification of innovative activities, particularly in conditions of organizational pressure may be associated with the reduction of the subjective feeling of involvement in its chosen dimensions. Simultaneously, the occurrence of weak positive dependencies confirms the fact that the appropriately managed innovative climate that is based on support, cooperation and exchange of knowledge may favour the motivation and initative of the employees.

Hence, the research findings facilitate the conclusion that the effective shaping of the innovative climate requires balancing the requirements associated with the execution of innovative aims with the adequate managerial support, development of interpersonal competences of department heads, while also strengthening the proactive and team forms of involvement. In particular, it would appear to be significant to develop the monitoring mechanisms, while also the culture of sharing knowledge and building relations based on trust and identification with the leader. Such an approach may lead to the more complete use of the innovative potential of the organization, while also ensuring long-lasting and balanced growth in conditions of a dynamic environment.

Despite the valuable insights provided by this study, several limitations should be acknowledged. First, the study is based on a cross-sectional research design, which limits the possibility of establishing clear causal relationships between the innovative climate, the role of department heads, and the level of employee engagement. Future studies could therefore adopt a longitudinal approach in order to better capture the dynamics of these relationships over time. Second, the study relies on self-reported data provided by respondents, which may involve

a certain degree of subjectivity. Future research could address this limitation by applying mixed methods**,** combining both quantitative and qualitative approaches. Third, the study focuses on selected innovative sectors (pharmaceutical, energy, automotive, and IT)**,** which may limit the generalizability of the findings to other industries. Further research could extend the analysis to other sectors or conduct comparative cross-sector studies to verify whether similar relationships occur in different organizational contexts. Finally, future research could further explore the mechanisms linking innovative climate, leadership, and employee engagement, for example by analysing the role of additional variables such as organizational culture, knowledge sharing, psychological safety, or organizational support for innovation. Such studies would contribute to a deeper understanding of the social and organizational processes shaping innovative climate and innovative behaviour in contemporary organizations**.**

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THE CULTURE OF ORGANIZATIONAL VALUES AND EMPLOYEE WELL-BEING AND ENGAGEMENT

Izabela DUDEK_MUCZYŃSKA[1*], Joanna KIZIELEWICZ[2]

[1] Doctoral School of Gdynia Maritime University; i.dudek-muczynska@sd.umg.edu.pl,
ORCID: 0009-0006-5804-9853
[2] Faculty of Management and Quality Science, Gdynia Maritime University; j.kizielewicz@wznj.umg.edu.pl,
ORCID: 0000-0001-7415-9928
* Correspondence author

Purpose: Aim of article is to provide a systematic synthesis of empirical studies on relationship between organizational values culture, employee well-being and engagement, taking into account theoretical mechanisms explaining these links, in particular person-organization fit, social exchange, and satisfaction of basic psychological needs.
Design/methodology/approach: Study is based on systematic literature review conducted in accordance with PRISMA 2020 guidelines. Publications from 1970–2025 identified in Web of Science, Scopus, PsycINFO, ScienceDirect, and Google Scholar databases were analyzed. Quality and relevance criteria were applied, resulting in inclusion of 59 empirical studies in final synthesis.
Findings: Results indicate stable and positive relationship between organizational values culture, employee well-being and engagement. Well-being acts as mediator between values and engagement, strengthening vigor, dedication, and absorption at work. Person-organization value fit, social exchange relationships, and satisfaction of autonomy, competence, and relatedness needs play key role in this process. Values-based culture can be regarded as important psychosocial job resource. Values-based leadership and consistency between espoused and enacted values are also of major importance.
Research limitations/implications: Review was based on publications from selected databases and available in Open Access, which may have led to omission of some relevant sources and limited full representativeness of results. Diversity of definitions and measurement tools highlight the need for future longitudinal and multilevel studies combining quantitative and qualitative methods.
Practical implications: Findings show deliberate development of values-based culture and values-based leadership enhances employee well-being and engagement. Organizational values culture can therefore be treated as strategic resource supporting employment stability and organizational effectiveness.
Social implications: Promoting values-based culture in organizations can contribute to improved quality of working life, mental health, and sense of meaningful work. It may also help reduce phenomena such as burnout and "quiet quitting" and foster more ethical management standards.

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Originality/value: Article integrates the JD-R model, Person-Organization Fit, and social exchange theory into coherent framework explaining relationships between values culture, well-being, and engagement. It offers theoretical and practical value by providing basis for designing management practices that support employee well-being and engagement.
Keywords: organizational values culture, employee well-being, work engagement, values-based leadership.
Category of the paper: empirical research paper.

1. Introduction

Contemporary organizations operate under conditions of globalization, dynamic market changes, and increasing competition, which makes human capital a key resource for development. Academic literature emphasizes role of organizational values in shaping work environment that supports employee well-being and engagement (Dolan, García, Richley, 2006). A values-based culture influences interpretation of work experiences, social relationships, and the sense of meaning and fairness at work, a coherent system of values fosters well-being and engagement, whereas their inconsistency is associated with moral stress, and burnout (Geare et al., 2014).

Organizational culture, defined as a system of shared values, beliefs, and norms, shapes employee behavior and perceptions of organizational reality and serves both integrative and adaptive functions (Schein, 2010; Cameron, Quinn, 2011). At the same time, a values-based culture constitutes foundation of leadership and decision-making grounded in trust, responsibility, and integrity (Sekerka, 2007), while values perform an orienting and motivational function, shaped, among others, by leaders (Schwartz, 2012; Argandoña, 2003; Charles, 2021).

Closely related to a values-based culture is employee well-being, understood as positive functioning that includes both affective and cognitive components (Diener, 1984). One of its key correlates is work engagement, defined as full physical, cognitive, and emotional investment in one's work role (Kahn, 1990) or as positive, fulfilling state of vigor, dedication, and absorption (Schaufeli et al., 2002), measured, among others, by the Utrecht Work Engagement Scale (UWES).

Research on organizational values is conducted across multiple disciplines, including in context of mental health and occupational burnout; however, literature is characterized by fragmentation, inconsistent definitions of values-based culture, and diverse measures of well-being and engagement, with a predominance of cross-sectional designs (Van den Bosch, Taris, 2014; Koonmeeet et al., 2010).

2. Literature Review

2.1. The Relationship Between Values-Based Culture, Well-Being, and Engagement in Organizations

Research on organizational values-based culture has long constituted an important area within management and occupational psychology. Contemporary challenges such as artificial intelligence, digitalization, globalization, and cost pressure are reshaping context of work and employee-organization relationships, influencing perceptions of meaningfulness of work, job security, and psychosocial resources. Consequently, analysis of relationships between values-based culture, employee well-being, and engagement remains a significant line of inquiry.

A values-based culture can be defined as a set of beliefs, norms, and principles that shape behavior and decision-making, while also serving as an interpretive framework that strengthens organizational identification and fosters meaningful work, motivation, and loyalty (Cameron, Quinn, 2011; Kang et al., 2023). Meaningful work is strongly associated with employee well-being and engagement (Wrzesniewski et al., 1997). Well-being comprises both hedonic and eudaimonic components and depends on balance between job demands and resources such as support and autonomy (Warr, 1990; Ryan, Deci, 2001; Bakker, Demerouti, 2017).

Emotional and cognitive engagement in work is strengthened by value congruence, job resources, and social exchange relationships (Kahn, 1990; Cropanzano, Mitchell, 2005). A coherent values-based culture promotes employee well-being, which in turn translates into sustained engagement and improved organizational performance (Liang, Wong, 2023; Hendriks et al., 2020). These interrelationships are explained by P-O Fit (Chatmann, 1989), JD-R, social exchange theory, organizational culture frameworks, and Schwartz's theory of human values (Schwartz, 2007).

2.2. Values-Based Culture in the Organization

A values-based culture in organization defines expectations regarding employee behavior, strategic priorities, and management style. Values such as integrity, responsibility, and customer orientation strengthen work climate and organizational identification (Cameron, 2011; Dolan, García, Richley, 2006; Schein, 2010). Their consistent enactment by leaders and HR systems influences employee well-being, motivation, and engagement (Argandoña, 2003; Sani et al., 2022; Duncan, 2020). In turn, authentic leadership - such as servant, wise, or ethical leadership - enhances employee well-being and satisfaction (Jonker, Dube, 2025; Ardelt, Sharma, 2021; Qasim, Zafar, 2024). In the context of digitalization, digital competencies and e-leadership also support a values-based culture (Rizki Aulia, Lin, 2025). The measurement of organizational culture is conducted, among others, using the Competing Values Framework (CVF) (Cameron, Quinn, 2011; Beus et al., 2020), Schwartz's theory of values (2007),

and P-O Fit instruments (Kristof, 1996; Meglino, Ravlin, 1998). Qualitative methods, in turn, allow for the identification of deep cultural assumptions (Schein, 2010).

2.3. Employee Well-Being in the Organization

Employee well-being comprises both hedonic and eudaimonic components (Ryan, Deci, 2001; Warr, 1990) and depends on balance between job demands and job resources, including support, autonomy, recognition, and meaningful work (Bakker, Demerouti, 2017; Atan, Gelirli, 2025). The quality of social exchange and ethical leadership foster job satisfaction and reduce employee stress (Cropanzano, Mitchell, 2005; Udin, 2024). Conversely, a lack of value congruence leads to phenomena such as "quiet quitting" (Rahmadara, Rachmawatu, 2025; Saraiva, Nogueiro, 2025).

Employee well-being is therefore multidimensional and crucial for effectiveness, productivity, and engagement (Van der Merwe, Olivier, 2024). Its measurement includes job satisfaction, emotions, meaningful work, autonomy, stress, and burnout (Ryan, Deci, 2001; Diener, 1984). JD-R model integrates job demands and resources, highlighting the role of a values-based culture and positive social exchange (Demerouti et al., 2001; Bakker, Demerouti, 2017). Attention to employee well-being is also emphasized by Şenbursa (2024), whose research focused on a specific occupational group - seafarers.

2.4. Employee Engagement

Employee engagement is defined as vigor, dedication, and absorption in work (Schaufeli et al., 2002) and is strengthened by job resources and value congruence (Bakker, Demerouti, 2008; Kahn, 1990; Cameron, 2011). It serves as a mediator between a values-based culture and employee well-being through mechanisms such as P-O Fit, social exchange, and the satisfaction of the basic psychological needs for autonomy, competence, and relatedness (Blau, 1964; Cropanzano, Mitchell, 2005; Pincus, 2024). In the context of digitalization, technological resources support employee engagement when they are aligned with organizational values and leadership practices (Rizki Aulia, Lin, 2025). At the same time, relational leadership and human resource management foster creativity, retention, and job satisfaction, as emphasized by numerous authors, including Leah et al. (2025), Shertzer et al. (2022), Arvind and Verma (2025), and Lugviga and Kalvina (2024).

2.5. Models of Organizational Values Relationships

Models linking organizational values, employee well-being, and engagement include P-O Fit, JD-R model, social exchange theory, and CVF. The P-O Fit model indicates that value congruence promotes job satisfaction and engagement, whereas misfit leads to employee stress (Kristof, 1996; O'Reilly et al., 1991; Subramanian et al., 2023). JD-R model highlights importance of balancing job demands and job resources (Demerouti et al., 2001). CVF is used

to illustrate how dominant values influence the work climate and management style (Sasaki et al., 2017). Social exchange theory emphasizes that fair and consistent treatment of employees fosters loyalty, engagement, and well-being, as discussed by many authors, including Kurtessis et al. (2015), Meira and Hancer (2021), Imran et al. (2020), and Liu et al. (2024).

3. Methodology

The research methodology was based on a systematic literature review in accordance with PRISMA 2020 guidelines, covering scientific publications in Polish and English from 1970 to 2025, sourced from Web of Science, Scopus, PsycINFO, EBSCO, ScienceDirect, and Google Scholar databases. The selection included 59 publications that met thematic, quality, and Open Access availability criteria, based on screening of titles, abstracts, and full texts.

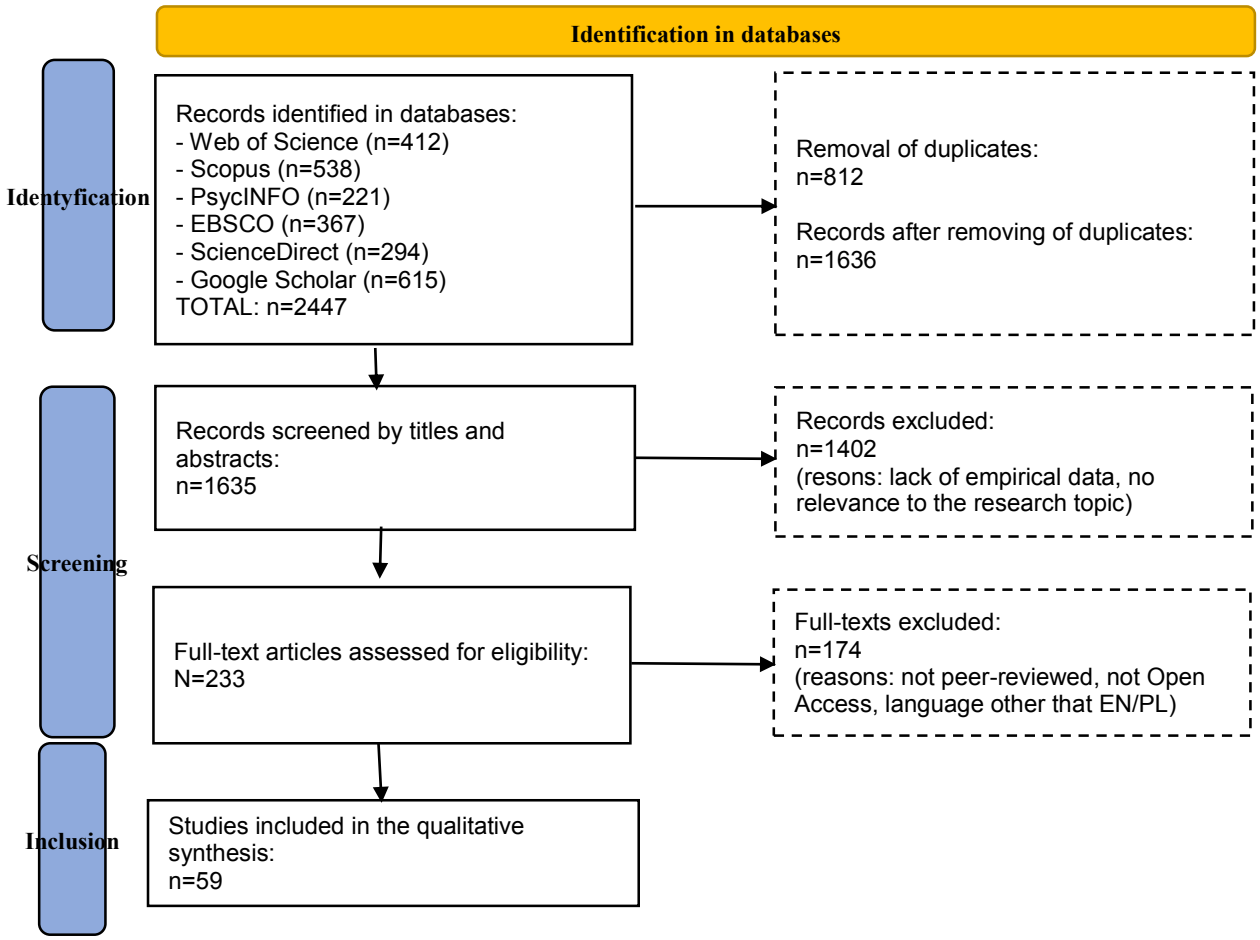

Figure 1. Process of identification, screening, and inclusion of studies in the systematic review (PRISMA 2020).

Source: own elaboration.

3.1. The Review Process

The review included peer-reviewed publications from 1970 to 2025, covering both classical and contemporary approaches to values-based culture, employee well-being, and engagement, including challenges related to digitalization, remote work, artificial intelligence, and "quiet quitting". Analysis focused on Polish- and English-language Open Access articles retrieved from Web of Science, Scopus, PsycINFO, EBSCO, ScienceDirect, and Google Scholar databases.

In the first stage, precise search queries were formulated using keywords related to organizational values, well-being, engagement, P-O Fit, JD-R model, social exchange theory, leadership, meaningful work, and digital work contexts. In the second stage, abstracts were screened, yielding 2447 records. After removing duplicates and excluding incomplete or irrelevant publications, 59 articles were included in final synthesis, ensuring reliability and representativeness of the review.

The search queries covered the following thematic areas:

1. Organizational values and organizational culture: *(organizational values OR values-based culture) AND (organizational culture OR workplace culture)* and *(Competing Values Framework OR CVF) AND (organizational culture OR organizational values)*.
2. Employee well-being and mental health: *(employee well-being OR workplace well-being) AND (psychological well-being OR subjective well-being)*; *(job stress OR work stress) AND (work-life balance)*; *(resilience OR thriving at work OR flourishing at work)*.
3. Work engagement and motivation: *(work engagement OR employee engagement) AND (job resources OR Job Demands-Resources model OR JD-R)*; *(job satisfaction OR employee satisfaction) AND (work engagement OR employee engagement)*.
4. Exchange theories and P-O Fit: *(person-organization fit OR P-O fit OR value congruence) AND (employee well-being OR work engagement OR job satisfaction)*; *(social exchange theory OR organizational reciprocity OR perceived organizational support) AND (employee attitudes OR employee well-being OR work engagement)*.
5. Leadership, motivation, and meaningful work: *(ethical leadership OR responsible leadership OR virtuous leadership) AND (organizational values OR employee well-being OR work engagement)*; *(self-determination theory) AND (meaningful work OR work meaning)*; *(work stress OR occupational stress) AND (work-life balance OR job-life balance)*.
6. Contemporary and digital work contexts: *(digital workplace OR digital work environment OR artificial intelligence at work) AND (employee well-being OR work engagement)*; *(remote work OR hybrid work) AND (organizational values OR work engagement)*; *(employee agility OR workforce agility OR quiet quitting) AND (employee well-being OR work engagement)*.

4. Discussion and Conclusions

The literature analysis indicates that a coherent and authentic values-based organizational culture promotes employee well-being, engagement, and positive work climate, as confirmed by Cameron (2011) and Dolan et al. (2006). Empirical studies also emphasize the role of person–organization fit (P-O Fit), which strengthens employees' identification with the organization and supports higher levels of engagement (Schwartz, 2007; Bakker, Demerouti, 2017). An important factor is the consistent implementation of organizational values through leadership styles and human resource management practices (Rahmadara, Rachmawatu, 2025; Lugviga, Kalvina, 2024; Patel, Verma, 2025). Conversely, the lack of authenticity in the implementation of organizational values may lead to decreased motivation, burnout, and increased employee turnover, including the phenomenon of "quiet quitting" (Udin, 2024).

The reviewed studies are characterized by considerable heterogeneity, resulting from diverse definitions and conceptualizations of organizational culture (Hofstede et al., 2010; Cameron, Quinn, 2011). Researchers also apply different methods for measuring organizational values and P-O Fit (Meglino, Ravlin, 1998), as well as various conceptualizations of employee well-being and engagement (Kahn, 1990; Schaufeli et al., 2002). Both qualitative approaches (Schein, 2010) and quantitative survey-based methods are used in literature. In addition, researchers employ different analytical frameworks and measurement tools, including the JD-R model (Demerouti et al., 2001), the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002), and various approaches to measuring well-being (Diener, 1984; Deci, 1971).

The most important conclusion drawn from the systematic literature review is that values-based organizational culture and values-driven leadership are key determinants of employee well-being and engagement. Within the JD-R framework, values-based culture can be considered as essential job resource that enhances motivational processes and protects employees from negative effects of excessive job demands. Values such as integrity, responsibility, meaningful work, and mutual respect create conditions conducive to job satisfaction, mental health, and resilience to stress. The literature also shows that employee well-being acts as mediating mechanism between values-based culture and employee engagement, shaping the quality of work experiences and psychological safety. A critical role in this process is played by the alignment between employee and organizational values, social exchange relationships, and perceived organizational support. A coherent and authentic values-based culture supports satisfaction of autonomy, competence, and relatedness needs, thereby strengthening intrinsic motivation, loyalty, and work performance. Conversely, lack of authentic implementation of organizational values leads to erosion of trust, increased stress, and higher turnover intentions, negatively affecting both employees and organizations (Cameron, 2011; Hendriks et al., 2020).

A coherent and authentic values-based organizational culture, supported by values-driven leadership, is a key determinant of employee well-being, engagement, and positive work outcomes. Alignment between employee and organizational values, consistent implementation through leadership and HR practices, and perceived organizational support strengthen intrinsic motivation, loyalty, and performance, while lack of authenticity leads to stress, burnout, and turnover. Despite methodological and conceptual heterogeneity in the literature, the evidence consistently highlights the critical role of values in shaping work experiences, psychological safety, and resilience to job demands.

5. Limitations and Recommendations for Future Research

It should be emphasized that the conclusions of this study should be interpreted in light of its methodological limitations. The review was qualitative in nature and relied solely on the analysis of literature, without including primary empirical data from organizations. This scope allows for capturing dominant research trends and theoretical models, but does not permit testing causal relationships or assessing their strength in specific organizational contexts. A significant limitation is the definitional and operational heterogeneity of the constructs studied, as well as the selective choice of sources due to database coverage, time frames, and Open Access availability. Despite clearly defined search criteria, some relevant studies may have been omitted, particularly practical works or publications outside the main scientific databases.

Future research should therefore adopt longitudinal and multi-level approaches that integrate the perspectives of individuals, teams, and organizations, while combining quantitative and qualitative methods. It is also important to consider sectoral and cultural diversity and to analyze the impact of new work contexts, such as remote work, digitalization, and artificial intelligence, on the relationships between organizational values, employee well-being, and engagement.

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DARK SIDE OF LEAN OFFICE

Robert GOLEJ[1], Anna CIERNIAK-EMERYCH[2*]

[1] Wroclaw University of Economics and Business; robert.golej@ue.wroc.pl, ORCID: 0000-0003-4462-7035
[2] Wroclaw University of Economics and Business; anna.cierniak-emerych@ue.wroc.pl,
ORCID: 0000-0003-4435-4954
* Correspondence author

Purpose: The aim of the study is to determine the nature of the relationship between working conditions, creating an environment for creativity, and the manner and scope of implementation of 5S practices. This leads to the identification of the goals set for the implementation of 5S in the perspective of working conditions and the analysis of their potential and real impact on employee creativity.
Design/methodology/approach: The authors conducted a bibliographic query, in-depth interviews with managers and employees of companies and analyzed the documentation of the implementation of the 5S system. The research was a case study. The survey was conducted in three companies from the Lower Silesia region in Poland, which introduced the 5S method.
Findings: The analyzed implementations of 5S practices did not take into account the context of working conditions. The potential impact of the implementation on the mental comfort and creativity of employees was also not taken into account. The guiding principle of 5S implementations was to organize "everything" regardless of the specificity of the company's organizational units.
Research limitations/implications: The main limitation of the research is the lack of comparison of the ingenuity of departments operating in the LO regime and those operating in a more individualized way, tolerating a certain level of disorder. Future research should address, m.in this issue.
Practical implications: We notice that the creative process requires a certain amount of autonomy of employees, which often manifests itself in a certain disorder. This means that overregulation of the Lean Office can weaken the creativity of the employees, orienting them from solving problems to organizing the desk/laboratory, etc.
Originality/value: In the literature on Lean Management and Quality, the issue of the impact of 5S practices on employee creativity does not appear. On the other hand, this issue cannot be seen in the literature on creativity.
Keywords: Lean Management, Lean Office, 5S practices, employee creativity.
Category of the paper: Research paper.

1. Introduction

This article presents the results of research on the mechanisms of the relationship between the introduction of Lean Management (LM) tools such as 5S into an organization's creative space and employee personal creativity. The research findings presented in this article are part of a broader project on the impact of implementing 5S practices on working conditions, employee health, and their creativity. This section focuses on the potential and actual impact of working conditions on employee creativity shaped by the implementation of 5S practices. The aim of the study is to determine the nature of the relationship between creativity and the method and scope of 5S implementation. The main focus of the research is the analysis of issues arising at the intersection of Lean Manufacturing and the working conditions that shape creativity. The authors can be said to examine the sequence: 5S implementation – working conditions – creativity. It is common practice to transfer LM principles and adapt LM tools such as 5S to non-production areas (Becker, 2001, pp. 29-31; Gapp, Fisher, Kobayashi, 2008, pp. 565-579). There is even a new concept of LEAN OFFICE and a lot of literature promoting this approach, including (Schipper, 2019).

One may ask whether such an approach is justified in the case of: creative industries, R&D departments and other organizational units whose goal is to create innovative solutions, such as: algorithms, business models, products, sales models and others. Proponents of "putting everything in order" claim that organized reality organizes thinking, while the issue of activating the mind to look for new, unconventional solutions is used in practice to a very small extent. Rather, the organization focuses on increasing productivity and improving "what is" (Zimon, 2012). This concept can be a hidden internal block to novelty. Another problem is that if an organization wants to be creative, should it be a "mess"? What is the acceptable level of clutter and in what positions? The commonly emphasized innovation of the concept of Lean Management/Manufacturing lies in the fundamental Confucian philosophy expressed for the purposes of management as the Kaizen philosophy. Kaizen is a philosophy of continuous improvement. One may ask whether a strong emphasis on improvement makes radical innovation easier or more difficult.

We should also ask ourselves: isn't excessive organization of the work environment, especially in departments related to creative activity (using creative potential) the greatest waste? This waste is not noticeable because it is a potential, vague and deferred benefit, and therefore has the character of lost profits. The waste that LM focuses on is concrete, visible and immediate. It can be said that LM consumes the reserves of ordinary efficiency, long-term efficiency seems to be the result of creative solutions coming from outside or from within the company. What better stimulates order or clutter to create new, creative solutions. This question is particularly important in the era of the triumphant march of the LM philosophy and its tools through industrial organizations and attempts to adapt it to other activities of the organization.

This is called Lean Office (LO), which is the implementation of lean manufacturing philosophy in offices and administrative processes (Yokoyama, de Oliveira, Futami, 2019, pp. 67-77). LO helps streamline the flow of information in any administrative function by focusing on reducing the overall cycle time Wang (2010). According to Davim (2015), companies can only experience process improvements and the benefits of lean manufacturing principles if their implementation is successful. The difference in the application of lean concepts in research and development is also pointed out by Reinertsen and Shaeffer (2005, pp. 51-57). Researchers point to the possibility of simple application of selected LM methods, but the limited possibility of using many other balancing departmental activities, unfortunately, do not address the issue of creativity. First of all, we present the issue of 5S and creativity. Then the research results were presented, a discussion was conducted, and conclusions were drawn.

2. Literature Review

2.1. 5S Practices as an LM tool

In Poland, as Walentynowicz (2013) claims the lean management concept is usually described as "lean production", "lean manufacturing", "lean management" or "lean organization".

The literature indicates the entire range of LM tools from basic TPM, through SMED, JiT, 5S. It is worth mentioning the 5S system is considered to be particularly related with shaping and even improving working conditions. Gapp, Fisher, Kobayashi (2008, pp. 565-579) proves the 5S system (practice) is considered to be a tool used to support solving problems related to work organization. Some researchers e.g. Karaszewski (2009) indicates, that this helps not only enhance the work organization but also improve the conditions and safety at work. Therefore, attempts are being made to extend this system with another S, i.e. safety, viewed as safe and healthy working conditions. As a consequence, many researchers have proposed the concept of 5S + 1 and even 6S. This approach is noticed in publications Gajdzik (2013), Becker (2001, pp. 29-31). This approach was revealed in the first decade of the 21st century, but it is still valid. The issue of LM implementation in workplace ergonomics and safety is addressed by Tortorella, Cómbita-Niño, Monsalvo-Buelvas, Vidal-Pacheco, Herrera-Fontalvo (2020, pp. 276-283), Rose, Rashid, Mohamed, Jubri (2019), Tortorella, Vergara, Ferreira (2017, pp. 3407-3418) and many others.

The 5S practices, as argued by Zimon (2012), have an especially positive effect on physical working conditions, thus offering opportunities to minimize the costs of reorganization at workstations. In the book by Karaszewski (2009) we read he reference to 5S requires consideration of:

- seiri, as sorting and elimination of what's unnecessary,
- seiton, as an expression of systematization, setting in order and segregation,
- seiso, as sweeping and cleaning category,
- seiketsu, which favours standardization and thus order,
- shitsuke, relating to self-discipline.

As a consequence of using 5S practices, safe working conditions result directly from the essence of the discussed system. Szatkowski (2014) states, that 'Good organization in and around your own workplace' which is the term used to define the 5S system, also means management that is safe for human, taking into account meeting human interests in this respect.

2.2. Creativity

According to Amabile (1988, pp. 123-167), Kanter (1993), Drazin, Glynn and Kazajian (1999, pp. 286-307) and many other authors, creativity is usually associated with generating new ideas as a goal in itself, while innovation is the ability to apply new ideas to solve specific problems. The creativity of individuals and teams drives organic innovation in organizations. Without creative ideas, there is nothing to implement. Gong, Huang and Farth's (2009, pp. 765-778) research shows that employee creativity is related to overall work efficiency. This has specific and obvious implications for the innovative operation of an organization. The ability to encourage employees to innovate, to have appropriate innovation management mechanisms and resources necessary to develop innovations builds a broadly understood work environment that influences individual and group creativity. At the same time, it determines the company's ability to use individual creativity. Creativity is needed not only when creating ideas for new products and technologies, but also during their development and when solving various problems. 5S practices directly affect working conditions. The question that can be asked in the light of creativity is: does 5S stimulate creativity or not? Holistic and crosssectional studies conducted by Amabile (1988, pp. 123-167), Amabile and Pratt (2016, pp. 157-183), Geynor (2002) Cooper (2017) Golej (2013) led to the definition of proposals for innovation management models that take into account the relationship between individual creativity and organizational innovativeness.

Creativity, although based on individual potential, benefits and is inspired by interaction with others. This statement clearly indicates that being creative depends on the conditions and interactions with the social environment. The more social contacts at the level of discussion and ideas, the more inspiration and ideas. In practice, this means creating a space for the exchange of views and discussion. Discussion often takes a form that has little to do with order, but is full of passion. If, in the light of the previous considerations, creativity is an individual trait, does order and order really promote creativity? Or maybe a little mess can be a creative leaven for creativity. Below are some comments on clutter and creativity. According to American scientists, a cluttered desk is supposed to stimulate the mind to work hard. Researchers Vohs, Redden, and Rahinel (2013) concluded that: structured environments promote conventions and

healthy choices, which can improve life by helping people to comply with standards and increase well-being; Unstructured environments stimulate creativity, which is of great importance for culture, art, and business (e.g. creative industries).

Abrahamson and Freedman (2007) argue that "Organization and over-organization entail high costs that we do not notice, ignoring the fact that disorderly people or organizations are often more effective, creative and flexible". The research by Whittaker and Hirschberg (2001, pp. 150-170), who examined the structure of archives with the information processing strategy, is important from the point of view of the conducted considerations. They identified two groups of behaviors, the first group organized data, put them in binders, devoting a large part of their work to this. The second group arranged data in piles, in which the necessary data were on top, and the less important ones at the bottom of the pile. Archivists keep their desktops clean and prevent the accumulation of documents. The second group, on the other hand, has a messy desk, littered with piles of paper, which makes it rare for them to try to organize the information they store. Although archivists seem to have easier access to information, they do so at the cost of accumulating large archives that they then have to organize and manage

Extreme disorder will not improve creativity, just like extreme ordering. The 5S method seems too restrictive for creative activities, but some order is needed. This requires a flexible approach and adapting the 5S method to a specific situation, the deployment of employees and adapting to their temperament. One of the basic conditions for being creative is the ability to go beyond patterns and beaten paths. In this context, many methodological suggestions have appeared regarding being creative. We can mention here: the concept of horizontal thinking, lateral thinking or creative intelligence.

Other authors point out that the work environment, creative departments should have objects that inspire employees, are close to them and of course are not a threat in any way. Such objects mean that there will be “unnecessary” things on the desk, but in terms of stimulating creativity they are very important (IDEO), in a way triggering the imagination.

This leads to the determination of the research hypothesis H: The Lean Office method, and in particular 5S practices, do not work well as a tool to strengthen the creativity of employee.

3. Methodology

Two research questions were asked in the study. Has the impact of working conditions on employee creativity been taken into account when applying 5S? Does shaping working conditions using the 5S method take into account the goals and specifics of work at different positions? The next part uses empirical material on Lean Management (LM) implementations collected in three production companies in Lower Silesia, which implemented LM in the form

of 5S practices. Taking into account the qualitative nature of the discussed problems, the case study method was chosen to present them, placing greater emphasis on their in-depth understanding of the phenomenon. Wójcik (2013, pp. 17-22) argues that this was to find what only qualitative results can suggest. The data sources concerned the analysis of documents concerning the implementation of the 5S system in the enterprises of three manufacturing companies. Observation and free interviews with managers and employees involved in the implementation of the system were also used. In particular, in-depth interviewing (IDI) was used, which is a direct method of primary research in which the respondent is the active object of measurement and respondents remain in direct contact with the interviewers (interview). The interview was conducted in detail according to the rules proposed by Kaczmarczyk (1999).

4. Results

The main goal of 5S implementations was indicated as improving efficiency. In each of the analysed implementations, efforts were made to organise everything perfectly. Starting from the production hall, through the technological process, to the offices of the accounting department, technologists, laboratories and research and development departments. In the analyzed companies, attempts were made to include the entire organization in 5S practices, regardless of the type and nature of work. First, selection was made, all employees of the Production Department, Laboratory and Office marked items with red and green labels. In the next step - seiton, as an expression of systematization, order and segregation. By giving the appropriate arrangement to the things available at the workstation, shadow boards were pre-pared, storage places and internal communication routes were designated. Desk photos were taken as standard and norm. Seiso should take into account the introduction of cleaning schedules.

Standardization consisted of developing documents that would allow for the regulation of all procedures. Self-discipline: among others, continuous improvement of cleaning methods, maintaining order in the workplace, compliance with the principles of the 5S method will be implemented. In the studies conducted in each company, instilling self-discipline in maintaining order and tidiness in each area of the company's activity was considered a success. Continuous training of employees in this area was proposed.

Control methods were defined: regulations, shadow boards, office order and other standardizing documents. The non-physical working conditions in the 5S method were shaped by rigorous regulations and high expectations in terms of order.

Concepts such as order, mess and waste reduction were repeated in the interviews. There were no statements such as innovation, creativity, problem-solving in the interviews.

Some employees gave textbook answers that were literally in line with the leading message of the training.

Their active participation in the 5S implementation project contributed to the at-tempt to stimulate the creativity of employees. Which was reflected in the expectations regarding: identifying things to be removed, proposing a workplace organization and/or accepting a new workspace layout, cleaning and cheerfully following many rules (a kind of court etiquette).

Then, employees (in accordance with the KAIZEN concept) are expected to: propose continuous improvement of "what is" and arouse in them a sense of responsibility for the costs incurred. It can be said that the main guiding idea of the entire implementation of 5S principles is the constant search for waste.

The surveyed companies did not measure the quantity and quality of submitted ideas before and after implementation. Entries describing work efficiency in the non-production sphere are also not recorded. The lack of this information makes it impossible to objectively assess the impact of 5S implementation on employee creativity. Some employees indicated that they were eagerly awaiting a systemic resolution of issues related to order. Employees explained that they could not stand to watch their colleagues' work in disarray. And they did not want to ruin relationships with co-workers by drawing attention to the mess. Others indicated that sterile order would depersonalize their workplace and make them feel like guests or intruders in the company who make a mess.

First question. Based on the conducted research, it was found that most of the activities were aimed at improving efficiency by reducing time loss. One of the most important conclusions is that when introducing 5S, companies did not aim to support employee creativity. Referring to the question of whether working conditions were taken into account when implementing 5S, working conditions were not indicated as the goal of this implementation. The effects of the implementation were not verified in terms of the impact of the changes on employees' creativity, their well-being at work or the level of stress they experienced.

Second question. 5S practices used in all departments did not take into account the specificity of positions and the nature of creative work. In companies striving for standardization, the aspect of adapting working conditions to different positions in light of the demand for creativity was omitted. Another effect of standardization and systematization is the depersonalization of the workplace in favor of its standardization. Many researchers indicate that tightening the requirements for order may be associated with loosening the bond between employees and the organization. The logical consequence of recognizing that order, standardization, systematization are perfect is uniformity. Such a view may and should raise doubts. One of the reasons for progress is the tension resulting from diversity. Diversity also means a different level of order that a given person considers order. Of course, as a place of conducting group activities, the company cannot accept excessive disorder. Further inter-views showed that the feeling of anxiety did not disappear, but was replaced by a habit that weakened

its effect. They showed that the 5S method was implemented in a way that raised many concerns among employees. Other results of 5S implementation observed during interviews include:

- feeling the pressure of perfect order and avoiding mess at all costs,
- feeling of guilt due to lack of order,
- high specialization of employees and lack of immediate replacement, but possibility of quick training of a new employee,
- high specialization and lack of ability to transfer knowledge from other fields – routine,
- higher assessment by management of perfectly orderly employees than those who solve problems.

5. Discussion

We can say that the implementations were intended to program employees to maintain perfect order. The 5S control system leads to the consolidation of the belief that only order is the right state, and a dose of mess instead of inspiration leads to internal stress and guilt. It also leads to a sense of anxiety that a person will be judged not on what they have done, but on whether their desk is tidy. People who find it difficult to keep order are judged as people who lack order in their thinking. Therefore, in line with the need for recognition, they lower their self-esteem and focus on maintaining order, often wasting their creative potential. In the area of production, the restrictive 5S approach seems justified, but where the organization needs a bit of creativity and flashes of genius, it is not justified.

The assessment of the implementation of the 5S system largely depends on the temperament of the person making the assessment. There is a significant mismatch resulting from the different temperaments and personalities of people subjected to 5S pressure. For some, perfect order is not enough, for others, knowing what is where is enough. The considerations so far lead to the conclusion that these excessive demands, especially in the case of creative people, can lead to psychological problems. According to the version of the division of temperament introduced by Hippocrates-Galen, described by many researchers, including J. Strelau (1998). Phlegmatic and melancholic temperaments try to organize everything in the smallest details, devoting a lot of time to this task. Cholerics are goal-oriented. Sanguine people are interested in how others perceive them, and the concept of order is incomprehensible to them. An important conclusion can be drawn from the inverted U theory, which indicates that no extremes give the highest efficiency. This concept goes unnoticed Czakon (2012, pp. 7-10), Uzzi (1997, pp. 35-67). In this context, it is inappropriate to keep the creative work-place in excessive mess, similarly to an ascetic and sterile desk. Returning to the concept of creative thinking, it should be stated with full certainty that none of the implementations subjected to the study supported lateral or divergent thinking, creative intelligence or horizontal thinking.

The results of the study encourage the development of such solutions in the 5S system that, on the one hand, will ensure the stimulation of individual creativity, and on the other, will ensure a level of order in the workplace. Such a solution could be the adaptation of 5S principles to individual positions and then to employees. It can be said that this would mean the development of the 5S+P concept, where P stands for personalization (2019). Some researchers note the need to adapt the Lean concept to individual areas of the company's activity, pointing out, for example, the differences between Lean R&D and Lean Manufacturing.

6. Conclusion

Referring to the purpose of the work, it should be stated that the goals of the LO and the creation of conditions for creative work are often contradictory. The concept of 5S practices aims at organizing the workplace, which is justified in the production and office spheres (for repetitive/routine activities that do not require creativity). However, this concept does not fully work in the field of creative activities related to solving problems, creating something new, responding to the individual needs of customers. Here we need to release the creative potential and create conditions that will awaken this potential. Excessive demands on order can disrupt thought processes and creative processes. The important thing is that we want to solve the problem first and then clean up. We are talking about new solutions, products, services, organizational solutions that are critical to the survival of the company. As the work is of a team nature, the level of order will be a certain resultant of the expectations of individual employees. Of course, we also expect innovations from line employees, but incremental improvement innovations (KAIZEN) improving productivity/efficiency in the broadest sense.

The analyzed implementations are an example of ignoring the specifics of individual departments/workplaces, including "creative" departments such as R&D, marketing, related to strategy building. The consequence of this approach is also ignoring the fact that 5S practices create working conditions that affect the mental condition of employees. The analyzed implementations did not take into account the impact of 5S on the revealed creativity of employees.

The literature query and the research confirm the hypothesis that The Lean Office method, and in particular 5S practices, do not work well as a tool to strengthen the creativity of employee.

Future research should be directed at a deeper explanation of the phenomenon of individual and organizational creativity in the light of the work environment. An important aspect of research is the impact of cultural diversity on creativity, which manifests itself in multinational organizations.

Important for theory, entrepreneurs and companies implementing LO is the need to identify different requirements for different positions and departments. Leaving a significant dose of individualism for jobs related to problem solving, creative work, strategy building, etc.

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FROM PASSIVE ENVIRONMENTAL AWARENESS TO GENERATION Z ENGAGEMENT: IMPLICATIONS FOR GREEN HRM

Justyna GRZEŚ-BUKŁAHO

Bialystok University of Technology; j.grzes@pb.edu.pl, ORCID: 0000-0002-5083-1879

Purpose: The purpose of this article is to assess the environmental awareness of Generation Z and to determine its relationship with career decisions and pro-environmental expectations of employers.
Design/methodology/approach: The study employed a quantitative approach, with a sample size of 859 individuals.
Findings: Generation Z is characterized by a high level of awareness of the impact of the environment on life and health. This is related to a moderate belief in the effectiveness of individual actions, but translates to a limited extent into declarations regarding employer selection. The results indicate that, in the perception of young adults, green HRM should primarily have a practical and cultural (community) dimension.
Research limitations/implications: The research sample consisted of representatives of a single generation; comparative cross-generational research could deepen our understanding of any differences in the perception of pro-environmental activities of organizations. Furthermore, the study was cross-sectional in nature. Future research could be longitudinal, allowing for the observation of changes in attitudes toward green HRM over time.
Practical implications: The study results indicate that Generation Z's high declared environmental awareness fosters a positive reception of pro-environmental initiatives in organizations, but it is not a sole factor determining the selection of employers. For business, this means that green HRM should serve as a reinforcement rather than a replacement for key employment factors such as employment conditions or employee development.
Social implications: Research has shown that young adults' high awareness of the impact of the environment on their lives and health, as well as their belief in the effectiveness of individual actions, create favorable conditions for strengthening pro-environmental attitudes in society.
Originality/value: The study makes an original contribution by combining the perspective of environmental awareness with the analysis of career decisions in the context of green HRM. Furthermore, it integrates quantitative results with a qualitative analysis of expectations for employers.
Keywords: Green Human Resource Management, green management, Gen Z, sustainability, attitude-behavior gap.
Category of the paper: Research paper.

1. Introduction

In the last decades of the 20th century, attention began to be drawn increasingly to sustainable development, and this trend also extended to the sphere of organization and management (Dursun et al., 2025, p. 183). While in the past, a company's success depended primarily on promoting economic value, today organizations must attach importance to social and environmental factors, along with financial and technological ones (Vayyavur, 2024, pp. 25-29; Porter, Kramer, 2011, pp. 62-77; Eccles et al., 2014, pp. 2835-2857; Dimitrova, 2018, p. 86). This has contributed to the emergence of a new strategic phenomenon called green management (Oladele et al., 2023, pp. 277-279). Green management is only possible through the implementation of green human resource management to realize green values. This ensures the feasibility of green industry, green economy, green investment, and green society (Cherian, Jacob, 2012, pp. 25-31; Govindarajulu, Daily, 2004, pp. 364-372; Dutta, 2012, pp. 143-147).

The term "green HRM" has had a strong presence in recent research and academic publications (Grześ-Bukłaho, Kłoczko, 2024, pp. 97-117). This is, on the one hand, a result of increasingly broad legal regulations regarding environmental management and sustainable development, and, on the other, a result of growing public awareness of environmental protection and the need to preserve biodiversity (Devi, Kuldeep, 2024, pp. 1754-1755; Yue et al., 2020, pp. 1-16).

The growing awareness of threats related to climate change and environmental pollution is contributing to changes in human behavior. Naturally, this shift occurs with varying intensity in different societies and among representatives of different generations (Lisowski et al., 2022, p. 58). Currently, there is some debate and uncertainty about how to effectively implement green management principles among the youngest employees of organizations representing Generation Z, whose share in the labor market is constantly growing (Mishra, Awasthi, 2025, p. 73).

The aim of this article is to analyze the environmental awareness of Generation Z and to determine its relationship with career decisions and pro-environmental expectations of employers.

2. Literature Review

2.1. The Role of Environmental Awareness in Actions

Pro-environmental behavior should be considered any behavior that not only causes minimal environmental harm but can also bring benefits (Purnama et al., 2025, pp. 819-838). Shutaleva et al. (2022, p. 3) define responsible environmental behavior as "a system of

knowledge and skills that have formed responsible behavior of people in environmental management, environmental protection, and commitment to sustainable development goals". This applies to all spheres of human functioning: private, public, the natural and built environment, etc. (Stern, 2000, pp. 407-424). Therefore, it applies not only to personal behaviors, but also to those related to, for example, an individual's professional life. Research shows that individual environmental awareness and environmental practices at work are very helpful in shaping "corporate greenery" (Lu et al., 2017, pp. 166-175).

Starting from the definition of attitude, environmental awareness can be defined as a tendency to respond to environmental problems in a specific way (Culiberg, Rojšek, 2008, p. 132). Ham et al. (2016, p. 160) point out that it is an element of an individual's system of values and beliefs, but also a part of social awareness. High environmental awareness encourages individuals to adopt positive behaviors, thus supporting environmental sustainability (Munawara et al., 2019, pp. 22-29).

Research shows that Generation Z has a high level of environmental awareness (Divinagracia et al., 2024, p. 768; Luqman, Widagdo, 2025, p. 88). According to Hatalska (2022), young adults are aware of pro-environmental behaviors and, at a declarative level, are ready to lead such a life. On the other hand, an intention-action gap is becoming apparent as, despite their high awareness, Gen Z often fails to translate it into consistent actions to care for the environment (Jegorow, 2025, pp. 141-175). Therefore, organizational solutions are needed; otherwise, behaviors are much weaker (Widyanty et al., 2025). As Purnama et al. (2025, p. 819) point out, pro-environmental behaviors must be easy to implement and convenient, and their effects must be quickly beneficial, in order to be effective. Therefore, an awareness of environmental concern alone is not enough; specific behaviors are also important (Liobikienė, Poškus, 2019).

2.2. The Essence of Green HRM – Theoretical Foundations

Organizations are increasingly integrating economic and social goals with environmental objectives (Nogueira et al., 2023). Sustainability has become an ethical and strategic element of corporate responsibilities (Ansari et al., 2021, pp. 229-238; Zacher et al., 2023, pp. 465-494).

Green HRM is a concept that integrates human resource management and the environment (Shafaei, Nejati, 2024, pp. 266-287). It assumes that employees play a key role in the success or failure of pro-environmental initiatives, as their engagement is crucial for effective environmental management (Abd Rahman et al., 2025, p. 316). Green HRM expands the role of organizations in achieving sustainable goals by engaging all employees in implementing pro-environmental practices and raising awareness of green lifestyles in the workplace. Solutions adopted by companies are aimed at strengthening employees' environmental awareness (Kar, Praharaj, 2020, pp. 46-56).

The literature presents the components of the green HRM concept, with the most frequently mentioned as follows (Różańska-Bińczyk et al., 2020, pp. 80-82; Faisal, 2023):

- design and analysis of green jobs,
- green recruitment and selection,
- green training and employee development,
- green employee motivation,
- green employee performance management,
- commitment to green workplaces,
- green organizational culture.

Green HRM is therefore a complex process integrated with human resources management at all stages. Such comprehensive implementation enables the achievement of multidimensional organizational effects (Chowdhury, 2023, p. 160). The main benefits of applying the concept include, among others, increased efficiency, reduced costs, and greater employee engagement (Yasin et al., 2023, pp. 369-383). Furthermore, in line with its assumptions, it supports the protection of the environment and natural resources (Islam et al., 2022, pp. 17-29) and helps in the sustainable development of the organization and increase its competitiveness (Muisyo et al., 2022, pp. 22-40).

3. Research Methodology

The aim of the study was to assess environmental awareness and determine its relationship with career decisions among Generation Z individuals.

Based on a literature review, the following research hypotheses were formulated:

H1: Generation Z strongly agrees with the opinion that the environment influences daily life and health.

H2: Individuals who perceive the impact of the environment on health and life more strongly are more likely to believe in the effectiveness of individual actions.

H3: Individuals with higher self-assessed environmental awareness are more likely to consider an employer's pro-environmental stance when choosing a job.

Research Tool Characteristics

The study utilized a quantitative method, which focuses on collecting and analyzing data using statistical procedures. This method provides objective, measurable, and rational measurement, and aims to identify relationships or trends that allow for generalization of findings to a larger population (Barella et al., 2024, pp. 281-287).

Data regarding the study population were obtained using a standardized research questionnaire consisting of closed-ended and open-ended questions. A mixed-mode method (Górniak) was used, combining an online survey (CAWI) and a paper-based survey (PAPI) to increase sample representativeness. This study utilizes descriptive, tabular, and graphical methods to analyze and present the collected materials. Furthermore, the analysis of quantitative data (N = 859) was supported by qualitative data (open-ended questions) to provide a multidimensional perspective on the phenomenon under study.

Sample Characteristics

The research was conducted from May to December 2025 at selected universities in Poland. 859 individuals participated in the study. The inclusion criterion was Generation Z membership, defined as being born between 1995 and 2012. The sample included 445 women (51.8%), 402 men (46.8%), and 12 individuals indicated a different gender or declined to answer (1.4%). The detailed demographic data for the study group are presented in Table 1. The participants were purposefully recruited at the universities in Poland.

Table 1.
Demographic data of the survey participants

		N	%
Education	Higher	221	25,7
	Secondary	638	74,3
	Vocational	0	0
	Elementary	0	0
Place of residence	City with more than 500,000 inhabitants	7	0,8
	City with 200,000 to 500,000 inhabitants	148	17,2
	City with 50,000 to 200,000 inhabitants	138	16,1
	City with up to 50,000 inhabitants	235	27,4
	Rural area	331	38,5
Professional status	Pupil	2	0,2
	Student	858	99,9
	Employed	167	19,4
	Business owner	14	1,6
	Unemployed	0	0
	Retired/pensioner	4	0,5

Source: Source: author's own elaboration.

4. Research Results

Statistical analyses were conducted using the IBM SPSS package. Descriptive statistics and inferential statistical tests were used in the analyses, including the one-sample t-test, Spearman's rank correlation coefficient, and the Kruskal-Wallis test. The level of statistical significance was set at $\alpha = 0.05$.

Verification of Hypothesis 1

For the statement that the environment influences daily life and health, the distribution of responses was strongly skewed toward agreement. Over half of the respondents (52.3%) strongly agreed, and 40.5% somewhat agreed with the statement. The variable under study was rated highly (M = 4.42; Me = 5). The standard deviation (SD = 0.72) indicates moderate variability in responses and a relatively high level of agreement in opinions, with a small percentage of ratings below the maximum. The results are presented in Table 2.

Table 2.
Descriptive statistics for the statement that the environment influences daily life and health

N	Minimum	Maximum	M	Me	SD
859	1	5	4,42	5	0,72

Note: N – study sample; M – mean; Me – median; SD – standard deviation.

Source: author's own elaboration.

The distribution of responses is characterized by a clear asymmetry and a concentration of responses in the upper categories of the scale (4-5). This indicates a strong shift in the distribution towards a high level of agreement, as visualized in Figure 1.

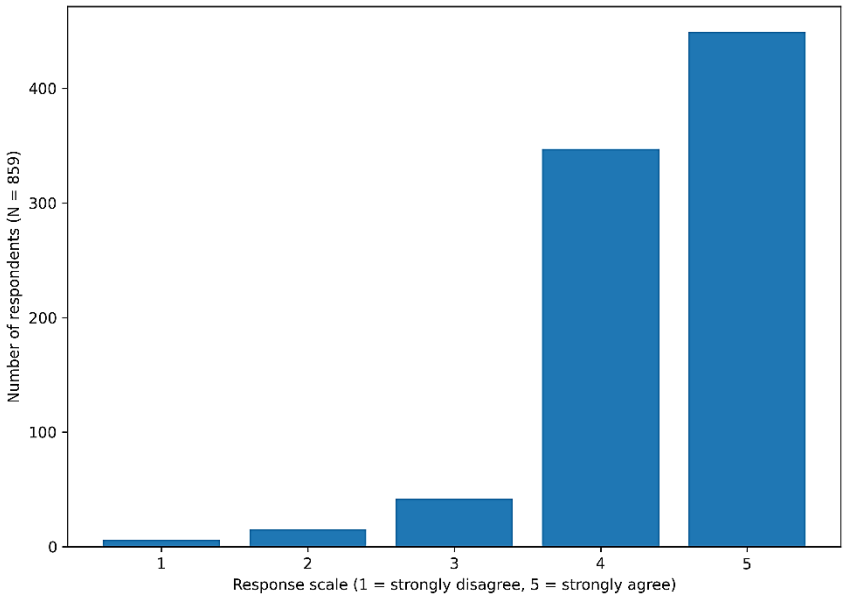

Figure 1. Distribution of responses with respect to the mean – the impact of the environment on life and health.

Source: author's own elaboration.

To test Hypothesis 1, a one-sample t-test was used, comparing the mean score with the neutral value (3). The statistical hypotheses were therefore:

$H_0 : \mu = 3.$

$H_1 : \mu > 3.$

The obtained results indicate that the mean assessment of the impact of the environment on daily life and health (M = 4.42; SD = 0.72) is significantly higher than the test value, t(858) = 57.95, p < .001. The difference in mean values was 1.42, and the 95% confidence interval for this difference ranged from 1.37 to 1.47. The obtained results are presented in Table 3.

Table 3.
One-sample t-test

t	df	Sig. (1-tailed)	Mean Difference	95% CI Lower	95% CI Upper
57,95	858	< .001	1,42	1,37	1,47

Note: t – value of the t-statistic (Student's t-statistic); df – degrees of freedom; Sig. (1-tailed) – statistical significance (one-sided test); Mean Difference – difference in means; 95% CI Lower – lower bound of the 95% confidence interval for the difference in means; 95% CI Upper – upper bound of the 95% confidence interval for the difference in means.

Source: author's own elaboration.

The size of the effect (Cohen's d) was also calculated, which allows for assessing the practical significance of the difference. The effect size was very large (d = 1.98), confirming Generation Z's strong belief in the impact of the environment on life and health. Hypothesis 1 was therefore clearly confirmed. Generation Z demonstrates a very high level of awareness of the relationship between the environment, health, and daily functioning.

Verification of Hypothesis 2

To verify this hypothesis, an analysis of Spearman's rank correlation and the Kruskal-Wallis test were conducted. The analysis of Spearman's rank correlation coefficient revealed a statistically significant, weak positive relationship between the perception of the impact of the environment on life and health (P1) and the belief in the effectiveness of individual actions (P2), $\rho = .18$, $p < .001$ (N = 859). The obtained results are presented in Table 4.

Table 4.
Spearman's Correlation

	P1	P2
Spearman's rho		
P1	1,000	,181**
P2	,181**	1,000
Sig. (1-tailed)		< .001
N	859	859

Note: Spearman's rho – Spearman's rank correlation coefficient; P1 – question regarding the impact of the environment on life and health (scale 1-5); P2 – question regarding the belief in the effectiveness of individual actions (scale 1-3); Sig. (1-tailed) – one-sided significance level; N – sample size.

** The correlation is significant at the 0.01 level (one-sided).

Source: author's own elaboration.

The Kruskal-Wallis test was used to compare the level of perceived environmental influence between the three groups. The results indicated statistically significant differences between the groups, $\chi^2(2) = 35.15$, $p < .001$ (Table 5). The highest mean rank was achieved by the group of individuals declaring their belief in the effectiveness of individual actions (Mean Rank = 475.38), as presented in Table 6.

Table 5.
Kruskal-Wallis Non-parametric Test

	P1
Chi-Square	35,15
df	2
Asymp. Sig.	< .001

Note: Chi-Square – value of the H statistic (approximated by the chi-square distribution); df – degrees of freedom; Asymp. Sig. – asymptotic level of significance (p-value).

Source: author's own elaboration.

Table 6.
Mean Ranks and Descriptive Statistics of Perceived Environmental Impact (P1) Depending on Belief in the Effectiveness of Individual Actions (P2)

P2	**N**	**Mean Rank**	**M**	**SD**
1 – No	261	389,12	4,26	0,82
2 – Hard to say	97	368,47	4,18	0,83
3 – Yes	501	475,38	4,55	0,60
Total	859			

Note: N – sample size; Mean Rank – mean rank in a given group; M – arithmetic mean; SD – standard deviation.

Source: author's own elaboration.

Figure 2 presents the mean values of perceived environmental impact (P1) depending on the belief in the effectiveness of individual actions (P2). The highest level of agreement was observed among respondents declaring their belief in the effectiveness of individual actions. The 95% confidence intervals indicate significant differences between the "yes" group and the other categories.

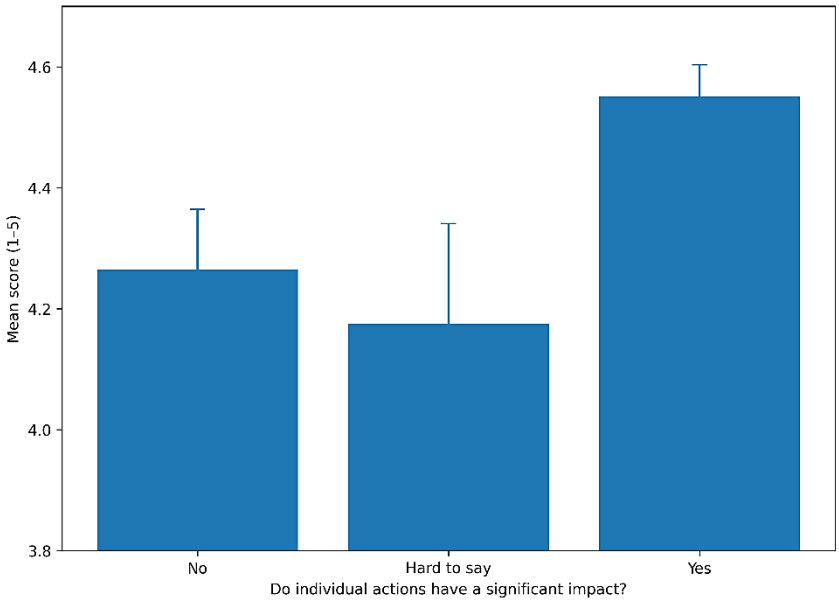

Figure 2. Mean values of perceived environmental impact (P1) depending on the belief in the effectiveness of individual actions (P2).

Source: author's own elaboration.

The obtained results indicate that the hypothesis was confirmed. The relationship between the variables is positive and statistically significant, but its strength is moderate, which suggests that the perception of environmental impact is one factor shaping the belief in the effectiveness of individual actions, but does not fully explain it.

Verification of Hypothesis 3

Similar to the previous hypothesis, an analysis of Spearman's rank correlation and the Kruskal-Wallis test were conducted.

The Spearman's rank correlation analysis did not reveal a statistically significant relationship between self-assessed environmental awareness and the declaration of considering the employer's pro-environmental attitude when choosing an employer, $\rho = .06$, $p = .071$ ($N = 858$). It is worth emphasizing that the relationship is positive, but does not reach statistical significance ($p > .05$), and the strength of the relationship is very weak. The obtained results are presented in Table 7.

Table 7.
Spearman's Correlation

	P3	**P4**
Spearman's rho		
P3	1,000	,062
P4	,062	1,000
Sig. (2-tailed)		,071
N	858	858

Note: Spearman's rho – Spearman's rank correlation coefficient; P3 – question regarding self-assessment of environmental awareness (scale 1-5); P4 – question regarding the declaration of taking into account the employer's pro-environmental attitude when choosing an employer (scale 1-3); Sig. (2-tailed) – two-sided significance level; N – sample size.

Source: author's own elaboration.

Additionally, the Kruskal-Wallis test revealed no significant differences in the level of self-assessment of environmental awareness between the three groups of respondents, $\chi^2(2) = 3.51$, $p = .173$ (Table 8). Although mean values of self-assessment were slightly higher in the group of individuals declaring they took their employer's pro-environmental attitude into account ($M = 3.69$; $SD = 0.82$) compared to the "n" group ($M = 3.53$; $SD = 0.77$), these differences did not reach statistical significance (Table 9).

Table 8.
Kruskal-Wallis Non-parametric Test

	P3
Chi-Square	3,51
df	2
Asymp. Sig.	,173

Note: Chi-Square – value of the H statistic (approximated by the chi-square distribution); df – degrees of freedom; Asymp. Sig. – asymptotic level of significance (p-value).

Source: author's own elaboration.

Table 9.
Mean Ranks and Descriptive Statistics of Self-Assessed Environmental Awareness (P3) Depending on the Declaration of Considering the Employer's Pro-Environmental Attitude (P4)

P4	N	Mean Rank	M	SD
1 – No	363	409,38	3,53	0,77
2 – Hard to say	386	435,27	3,61	0,64
3 – Yes	109	454,92	3,69	0,82
Total	858			

Note: N – sample size; Mean Rank – mean rank in a given group; M – arithmetic mean; SD – standard deviation.

Source: author's own elaboration.

The obtained results do not support Hypothesis 3 and indicate that the self-assessed environmental awareness is not a significant predictor of declared career decisions in the analyzed area.

In the remainder of the study, a content analysis of open-ended responses was used. In the first stage, open coding was conducted, and then the codes were grouped into thematic categories. The respondents were asked to indicate what pro-environmental activities they would expect from their employer. The structured responses are presented in Table 10.

Table 10.
Categories of actions expected from the employer

Category	Examples of solutions indicated by respondents
1. Waste management	office waste sorting, selective collection containers, e-waste collection, recycling system, limiting single-use packaging
2. Reduction of plastic	elimination of plastic cups and bottles, water dispensers, replacing plastic with biodegradable materials
3. Paper reduction	document digitization, e-invoices, electronic signature
4. Energy and water saving	energy-efficient lighting, equipment shutdown, renewable energy installations, energy consumption monitoring, motion sensor lighting in less frequently used rooms
5. Environmental/ESG strategy	climate neutrality, reporting of CO_2 emissions, transparency of environmental activities
6. Environmental education of employees	training, information campaigns, webinars
7. Green benefits and mobility	inclusion of electric cars in the fleet, bicycle subsidies, carpooling, subsidized public transport, company buses, remote work

Source: author's own elaboration.

The respondents' expectations focused particularly on operational activities, including waste management, resource efficiency, and plastic reduction. Responses related to the strategic level (ESG, reporting, and climate neutrality) were less frequent. From the perspective of the green HRM concept what dominated were the sustainable workplace practices and green operational practices, with the strategic green HRM to a lesser extent.

The respondents were then asked what pro-environmental initiatives companies should engage employees in. The structured responses are presented in Table 11.

Table 11.
Categories of Employee Engagement Initiatives

Category	Examples of Solutions Mentioned by Respondents
1. Ecological Volunteering	Tree planting, cleaning green areas, "Clean Up the World" Campaigns
2. Waste Reduction Programs, Waste Management	Zero Waste Competitions, Battery Collections, Electronic Waste Collections, Waste Sorting
3. Reducing Plastic in the Workplace	"Plastic-Free" Campaigns, Joint Initiatives to Reduce Single-Use Products
4. Energy and Water Saving	Energy-Efficient Lighting, Turning Off Equipment, Monitoring Energy Consumption, Saving Water
4. Environmental Education and Workshops	Training, Thematic Workshops, Expert Lectures, Pro-Environmental Campaigns, Pro-Environmental Competitions
5. Sustainable Consumption	Avoiding Food Waste, Joint Campaigns to Promote Local Products, Sharing of Items and Equipment Between Employees
6. Ecological Transport	Cycling Days, Carpooling, Car Sharing, Promotion of Public Transport

Source: author's own elaboration.

Participatory activities dominate the respondents' responses, particularly cleanups, tree planting campaigns, and waste reduction programs. From a green HRM perspective, this clearly reflects an ecological organizational culture, ecological employee engagement, and ecological engagement strategies.

5. Discussion and Summary

The aim of the study was to assess the level of environmental awareness among Generation Z representatives and determine its relationship with their declarations of pro-environmental actions in the organizational context.

The obtained results indicate that the vast majority of respondents recognize the significant impact of the environment on their lives and health. The high level of agreement (92.8% overall) indicates a well-established perception of the relationship between the state of the environment and quality of life. Furthermore, a significant, albeit weak, positive relationship was found between the perception of environmental impact and the belief in the effectiveness of individual actions. This result is consistent with the role of awareness in shaping pro-environmental attitudes presented in the theoretical section of the article. However, it should be noted that the moderate strength may indicate other, additional factors shaping Generation Z's beliefs.

However, the third hypothesis, which postulates a relationship between self-assessed environmental awareness and the declaration of considering an employer's pro-environmental attitude when choosing an employer, was not confirmed. This result may indicate that for young adults, the process of transitioning from self-assessed awareness to career decisions is complex. Therefore, other factors, such as market, economic, or pragmatic ones, may be crucial.

The obtained results are consistent with the concept of the attitude-behavior gap, indicating that people's declared values are not always linked to subsequent actions (Cui et al., 2019, pp. 1105-1118; Souza-Neto, Marques, 2022, pp. 200-202; Carrington et al., 2015, pp. 21-38). In the analyzed case, high environmental awareness does not necessarily correspond to declared career choices.

The analysis of the open-ended responses of representatives of Generation Z indicates two distinct dimensions of the perception of pro-environmental activities in organizations: the operational dimension (e.g., waste management, energy and water savings, plastic reduction, and paper use reduction) and the participatory dimension (e.g., community initiatives, team-building activities, and workshops). Therefore, respondents perceive the role of green HRM primarily through the lens of operational practices and organizational culture, and less so as an element of strategic management.

In summary, from the perspective of young adults, implementing the concept of green HRM in an organization requires a coherent combination of practical operational practices, employee integration activities, and transparent strategic communication.

The identified limitations in the research process indicate that the research sample consisted of representatives of a single generation; comparative intergenerational research could deepen our understanding of differences in perceptions of pro-environmental activities of organizations. Furthermore, the study was cross-sectional in nature; future research could be longitudinal, allowing for the observation of changes in attitudes toward green HRM over time.

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THE NEET PROBLEM IN THE SILESIAN VOIVODESHIP IN THE CONTEXT OF ENERGY TRANSITION

Paulina KOPYTO

University of Economics in Katowice; paulina.kopyto@uekat.pl, ORCID: 0009-0007-4752-1873

Purpose: This article analyzes the NEET phenomenon in the Silesian Voivodeship in the context of the ongoing energy transition. It identifies factors influencing young people's withdrawal from education, employment, and training, examines how the energy transition affects youth labor market integration programs. The study also explores measures that may support the employability of young people in the region.
Design/methodology/approach: The article employs a critical literature review and quantitative statistical methods based on data from the Local Data Bank of the Central Statistical Office. An analysis of trends and dynamics enabled the identification of changes in the study area. The study also incorporates secondary data analysis and a qualitative assessment of regional labor market conditions.
Findings: The analysis indicates that the NEET phenomenon in the Silesian Voivodeship results from a variety of determinants, including family, individual, and socioeconomic ones. A key issue is the mismatch between young people's skills and labor market demands, particularly in the context of the energy transition. At the same time, targeted education and training programs can facilitate entry into the labor market and help reduce early school leaving.
Research limitations/implications: The identified limitations stem primarily from the imperfections of the statistical data. On this basis, it is difficult to clearly determine the causes of early school leaving, non-participation in training, and unemployment. Further research is recommended, including in-depth individual interviews, to more precisely identify the underlying sources of the problem.
Practical implications: The findings highlight the need for coordinated educational, social, and economic policies. Cooperation among schools, employers, and local authorities is essential to adapt educational systems to labor market needs. Internship and training programs focused on renewable energy and innovation sectors may support both employers and young workers.
Social implications: Reducing the NEET phenomenon may strengthen social integration, improve quality of life, and support local community development while enhancing the region's capacity for energy transition.
Originality/value: The article links the NEET phenomenon with energy transition challenges, identifying specific risks and opportunities for young people in the Silesian Voivodeship.
Keywords: NEET, youth, labor market, Silesian Voivodeship, energy transformation.
Category of the paper: Research paper.

1. Introduction

The stability of economic structures is largely dependent on economic equilibrium, and its disruption poses a serious threat to the functioning of the labor market, manifesting itself, among other things, in rising unemployment rates. Unemployment among young people just entering the labor market is a particularly disturbing phenomenon. Early withdrawal from education, a lack of motivation to undertake training, and abandonment of professional activity contribute to the NEET (Not in Education, Employment, or Training) problem. The literature indicates that the consequences of NEET can often be more harmful than the effects of general unemployment, both socially and macroeconomically (Balcerowicz-Szkutnik, Wąsowicz, 2017).

The NEET problem is particularly significant because it affects economies, entire communities, and individuals. Young people lacking professional experience or a full education face a range of challenges that may, in the long term, hinder their ability to function in the labor market. Therefore, deepening our understanding of the reasons why young people choose to leave education, training, and employment is crucial for education and labor market policy, at both the local, regional, and national levels.

In the Silesian Voivodeship, the NEET problem is gaining additional significance due to the ongoing energy transition. The process of abandoning traditional industries, such as mining, while simultaneously developing new, sustainable economic sectors is important from an ecological perspective, but it also creates numerous social and professional challenges, including for young people (Kiewra, Szpor, Witamewski-Baltvilks, 2019). Lack of adequate preparation for the new labor market requirements can exacerbate the phenomenon of professional inactivity and increase the risk of youth remaining in the NEET group. In this context, supporting young people in acquiring competencies that meet the needs of an economy based on innovation and green technologies becomes crucial. At the same time, there is a research gap in the literature regarding the analysis of the NEET problem in the regional context of the energy transition. To date, the way changes in the employment structure in the Silesian Voivodeship impact the scale and nature of this phenomenon has not been fully explored, justifying the need for further research in this area.

The aim of this article is to analyze the NEET phenomenon in the Silesian Voivodeship in the context of the ongoing energy transition. The study focuses on identifying socioeconomic factors that may influence young people's decisions to leave education, training, and work, as well as on determining how the energy transition process may both exacerbate the NEET problem and create new career opportunities for the younger generation.

2. Characteristics of the NEET Phenomenon and Counteracting Measures

When analyzing the contemporary labor market, attention should be paid to the NEET (Not in Education, Employment, or Training) phenomenon, which is a growing socioeconomic challenge. It affects young people who remain outside the sphere of education and employment. (Muster, 2020, p. 135). In most European Union countries, this problem requires urgent intervention, as its scale is becoming dangerously high. Furthermore, due to statistical limitations and imperfect indicators, the actual number of people belonging to this group may be significantly higher than official data. Therefore, to properly address the NEET problem, a simple analysis of employment and unemployment rates is not enough. It is necessary to distinguish the complex social, economic, and individual conditions that young people encounter in the contemporary labor market. The literature attempts to formulate the causes of the emergence and persistence of this phenomenon (Serafin-Juszczak, 2014, p. 45).

The NEET group comprises young people who neither study nor work. They are often supported by their parents, and sometimes engage in illegal activities. Not engaging in education and work can be both a conscious decision by an individual and a consequence of structural constraints in the labor market. The NEET phenomenon is a significant problem in the contemporary market economy, with significant macroeconomic consequences (Szymańska, 2025, p. 301). Persistent long-term unemployment and the limited effectiveness of support measures for young people entering the labor market indicate the need for systematic monitoring and counteracting this problem.

The fundamental characteristic of the NEET category is a complete lack of engagement in education and employment. This group is highly diverse, preventing it from being treated as a homogeneous group. It includes both highly educated individuals and those who left education early, without completing a full, or sometimes even basic, education. A common characteristic among members of this group is a lack of motivation to seek appropriate employment and a reluctance to continue education or further training. A difficulty in researching the NEET phenomenon stems from the fact that some young people who do not engage in employment or participate in education are not included in official statistics. Difficulties in defining the NEET group limit the possibility of formulating conclusions and recommendations for preventive measures (Muster, 2020, p. 146). However, it is still possible to create and implement effective programs aimed at minimizing the risk of the NEET problem worsening. Szymańska (2025, p. 303) distinguishes at least a dozen existing models and programmes of support for NEET youth, adapted to the specificity of national and local socio-economic systems.

Table 1.
Models of support for NEET youth in Europe

Model	Country	Description	Program Name
Universal	Sweden, Finland	extensive social benefits system that supports young people in their education and professional integration processes	Ohjaamo, Navigator, Ung Framtid, and Young Future
Employment-focused	Austria, France, Germany	focused approach to youth activation in the labor market	Spacelab, Emplois d'Avenir, Jobs for Future, Plus JA – Jugend in Arbeit Plus, and Youth in Work Plus
Liberal:	Ireland	individual independence plays a key role, and social support is strictly dependent on income	VTOS – Vocational Training Opportunities Scheme
Sub-protective	Italy, Spain	strong role of the family combined with low levels of social protection from the state	Dote Unica Lavoro (DUL), Unified Employment Endowment, and PICE – Programa Integral de Cualificación y Comprehensive Qualification and Employment Programme
Transitional	Poland, Slovakia	combines features of liberal and sub-protective models	Idea for Yourself, Equal on the Labor Market, Awaken Your Potential, Activation Action, I Bet on the Future, and Absolventska Prax – Graduate Practice

Source: own study based on (Szymańska, 2025, p. 303).

The above overview indicates that approaches to supporting NEETs vary and are highly dependent on the social policies and labor market structure of a given country. However, common to all models is the pursuit of improving the integration of young people into both the education system and the labor market.

The NEET problem has both micro- and macroeconomic dimensions (Skórska, 2016). From a microeconomic perspective, factors contributing to the problem include family difficulties such as parental divorce, caregiver unemployment, low income, and various social dysfunctions. Particularly vulnerable are individuals with chronic illnesses, disabilities, early parenting experiences, addictions, or migrant status (Rahmani et al., 2024, p. 2). Young people who exhibit early adaptation problems, difficulties adhering to social norms, or a lack of engagement in the educational process also fall into the NEET group (Barszcz, 2019, pp. 106-107).

From a macroeconomic perspective, the NEET problem intensifies during periods of economic slowdown, when young people become more vulnerable to job loss and difficulties entering the labor market. In the Silesian Voivodeship, a risk factor is the ongoing energy transition, which is leading to significant structural changes in the region's economy. The shift from traditional industrial sectors to industries related to renewable energy sources often requires specific qualifications and skills from future employees (Drobniak et al., 2022, p. 165). Therefore, the lack of adequate preparation for these changes may lead to a deepening problem of youth professional inactivity and perpetuate the NEET problem in the Silesian Voivodeship.

3. The NEET phenomenon in the Silesian Voivodeship and the energy transformation

In line with the European Green Deal, the European Union aims to achieve climate neutrality by 2050. This goal requires the transformation of all key economic sectors, including energy, agriculture, transport, construction, and selected industries such as steel, cement, ICT, textiles, and chemicals (European Parliament and Council of the EU, 2021). In Poland, the Silesian Voivodeship plays a significant role in the national energy sector. This region is characterized by a high level of industrialization and significant diversification of economic activities, including heavy industry, automotive production, the technology sector, and advanced services. The Silesian Voivodeship's share in Poland's gross domestic product, approximately 13%, also confirms its significant role in the country's economic structure (Janikowska, Kulczycka, 2025, p. 152). The process of deep energy transformation, although necessary due to the need for environmental protection and long-term development, generates a number of serious socio-economic and cultural challenges. Of significance here are, among other things, issues related to labor market restructuring, changes in professional and regional identity, as well as social tensions stemming from job insecurity. These changes can lead to the phenomenon of disadvantage, i.e., the gradual marginalization of specific social groups or areas. The NEET problem is also deepening, taking on a specific form in the Silesian Voivodeship, as it is determined by both historical factors and the contemporary importance of industry and the dynamics of the ongoing energy transformation. The identity of the Silesian Voivodeship's community is deeply rooted in the coal industry (Pepłowska et al., 2024, p. 173). For many residents, the transition away from coal and the closure of mines means a loss of professional stability and identity, which, combined with economic uncertainty, increases the risk of social marginalization. These changes affect both mature individuals and young people entering the labor market, who must navigate a new reality completely different from that of their parents and grandparents. The transformation process simultaneously requires intensive adaptation of the labor market, in particular the retraining of workers previously associated with mining and related sectors (Cappellano et al., 2023). The challenge is significant because, beyond the miners themselves, it also affects a broad range of services, whose operation was and continues to be dependent on the mining industry. Failure to adapt skills to the requirements of a green economy can lead to increased structural unemployment. In these conditions, the NEET phenomenon is particularly acute among young people from peripheral areas, where employment and professional development opportunities are limited. The lack of attractive career paths promotes migration and exclusion from the labor market and education system. The consequences of these processes are multidimensional and include: deterioration of socioeconomic conditions, limited development opportunities, and an increased risk of mental health problems. NEET status is associated with lower well-being, social exclusion, higher

unemployment, the risk of criminal behavior and mental health problems, including suicide attempts.

An analysis of NEET determinants in the Silesian Voivodeship in the context of the energy transition allows us to identify both macroeconomic and microeconomic factors that shape the scale of youth inactivity. Key macroeconomic determinants include the aforementioned changes in the voivodeship's economic structure, which has traditionally been strongly dependent on heavy industry and mining (Frankowski, Mazurkiewicz, 2020, p. 9). Failure to adapt to new labor market requirements increases the risk of becoming NEET. This problem is particularly acute among individuals who left education early and did not undertake vocational training. The following figures present the percentage of NEETs in the Silesian Voivodeship and across Poland between 2010 and 2024. Young people are divided into two age groups: 15-24 and 25-29, according to data provided by the Central Statistical Office.

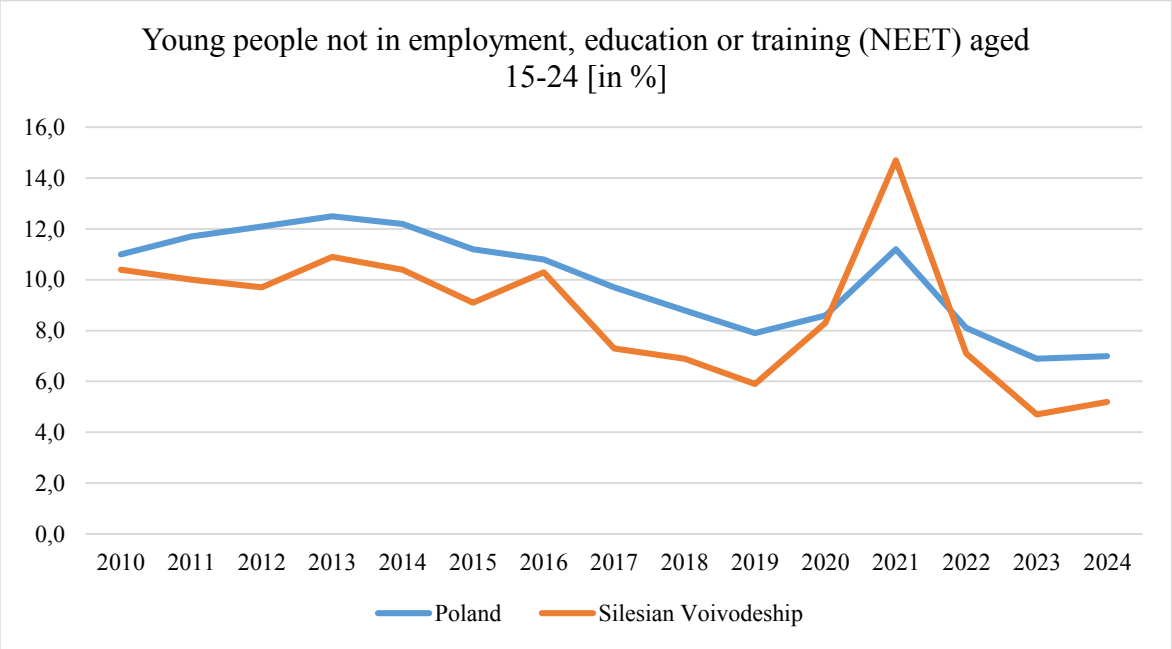

Figure 1. NEET aged 15-24 [in %] in Poland and the Silesian Voivodeship in 2010-2024.

Source: Own study based on Central Statistical Office data (access: 12.02.2026).

The figure indicates that during the period under review, from 2010 to 2024, the percentage of young people in the NEET group was slightly lower in the Silesian Voivodeship than the national average. The exception was 2021, when the NEET rate in the Silesian Voivodeship increased to nearly 15%, while the national average was approximately 3.5 percentage points lower. The increase in the NEET rate during this period was undoubtedly a consequence of the COVID-19 pandemic.

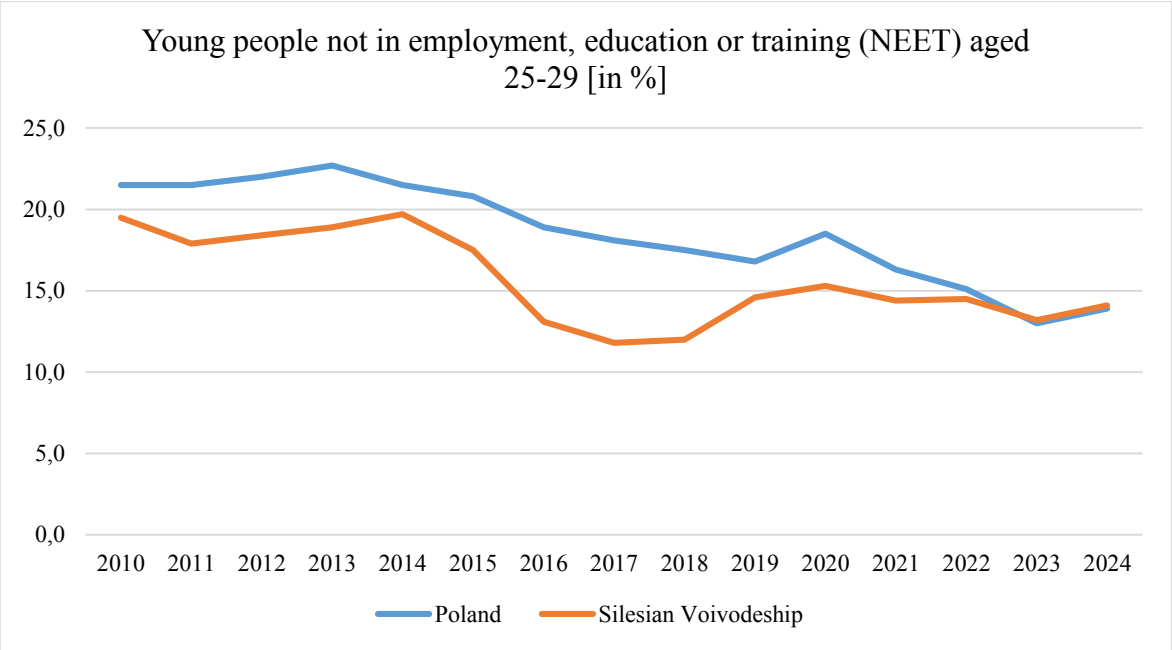

Figure 2. NEET aged 25-29 [in %] in Poland and the Silesian Voivodeship in 2010-2024.

Source: Own study based on Central Statistical Office data (access: 12.02.2026).

The percentage of NEET individuals aged 25-29 is higher than among previously analyzed younger individuals, both for the Silesian Voivodeship and for Poland as a whole. In the analyzed voivodeship, the NEET rate in this age group exceeds the national level by 0.2 percentage points in 2023 and 2024. Statistics Poland (GUS) data indicate that individuals aged 25-29 are at greater risk of NEET status. Based on data for the 25-29 age group, chain-based indices were calculated for selected shorter time periods, reflecting the direction of observed changes. Due to the variability of the NEET rate during the analyzed period, manifesting itself through alternating increases and decreases, conducting the study without appropriate division into shorter time periods would be inappropriate.

Table 2.
Rate of change of NEETs aged 25-29 [in %] in Poland and the Silesian Voivodeship in 2010-2024

Year	Poland	Silesian Voivodeship	Poland			Silesian Voivodeship		
			2010-2013	2013-2019	2020-2023	2011-2014	2014-2017	2017-2020
2010	21,5	19,5						
2011	21,5	17,9	1,00					
2012	22,0	18,4	1,02326			1,02793		
2013	22,7	18,9	1,03182			1,02717		
2014	21,5	19,7		0,94714		1,04233		
2015	20,8	17,5		0,96744			0,88832	
2016	18,9	13,1		0,90865			0,74857	
2017	18,1	11,8		0,95767			0,90076	
2018	17,5	12,0		0,96685				1,01695
2019	16,8	14,6		0,96000				1,21667
2020	18,5	15,3						1,04795
2021	16,3	14,4			0,88108			

Cont. table 2.

2022	15,1	14,5			0,92638			
2023	13,0	13,2			0,86093			
2024	13,9	14,1						
geometric mean			1,01827	0,95107	0,88905	1,03245	0,84296	1,09044
rate of change			1,83%	-4,89%	-11,10%	3,25%	-15,70%	9,04%

Source: Own study based on Central Statistical Office data (access: 12.02.2026).

The rate of change determined for the periods presented in the table allows us to observe a downward trend in the NEET rate for Poland. In the Silesian Voivodeship, the NEET rate showed greater volatility, falling by nearly 16% in the 2014-2017 period, and increasing by approximately 9% in the subsequent 2017-2020 period. Factors contributing to the NEET problem in the Silesian Voivodeship are diverse. Undoubtedly, at the macroeconomic level, the energy transition may contribute to the deepening of the NEET phenomenon. However, at the microeconomic level, familial and social factors are among the most important contributing factors. Young people from low-income families, those experiencing unemployment of one or both parents, divorce, or other family difficulties, are at risk. Such conditions can limit both motivation and opportunities for education and employment.

A significant determinant of NEET in the Silesian Voivodeship is the misalignment of the education and vocational training system with the current needs of the labor market. Furthermore, limited access to apprenticeships, internships, and specialized courses impacts the ability to gain professional experience, which is crucial for finding employment after graduation. Equally important are young people's attitudes toward education and work. A lack of motivation to continue learning, low awareness of one's strengths, and a reluctance to take proactive steps toward employment contribute to the perpetuation of the NEET status. Unfortunately, long-term NEET status can lead to pathological phenomena such as addiction, conflicts with the law, and social isolation (Krause, 106, p. 71). A lack of educational and professional activity at a young age also increases the likelihood of unfavorable socioeconomic patterns persisting into adulthood, hindering social and financial advancement and overall functioning. In the Silesian Voivodeship, the NEET problem can further impact the region's stability, particularly in cities and municipalities traditionally dependent on heavy industry. The transformation is causing a reduction in some jobs and increasing economic uncertainty, which may also lead to a lack of professional activity among young people. The deepening NEET problem in the Silesian Voivodeship during the energy transition is leading to unfavorable changes through:

a) a reduced supply of qualified labor,

b) a reduction in the voivodeship's productivity and innovation,

c) an increase in public spending to support early school leavers and unemployed people,

d) a reduction in tax revenues and a reduction in young people's consumption potential,

e) an increase in radical attitudes and views among young people,

f) an increase in social problems and conflicts with the law (Muster, 2020).

The energy transition in the Silesian Voivodeship further highlights the lack of currently required competencies among young people and leads to underutilization of existing potential. This leads to a growing NEET problem, which in turn limits the region's economic development opportunities.

4. Recommendations regarding the NEET phenomenon in the Silesian Voivodeship

The NEET phenomenon, due to its multidimensional impact on both individuals and the economy, requires a comprehensive approach in educational, social, and labor market policy. Analysis of the determinants and consequences of the problem indicates the need to implement measures focused on three main areas: education, professional activation, and social support. A key element in counteracting the NEET phenomenon is the introduction of career guidance mechanisms at an early stage of education (European Commission, EACEA, Eurydice, Cedefop, 2014, p. 11). Such measures should include:

a) improving educational and career guidance programs in secondary schools (Górka, 2015, p. 35),
b) facilitating young people's access to information about opportunities for further education and professional development (European Commission, 2010, p. 6),
c) supporting the selection of an educational path that aligns with students' aptitudes and interests while also responding to their external circumstances (Smolbik-Jęczmień, 2017, p. 107).

Additionally, early educational support should include promoting entrepreneurial attitudes, initiative, and independent problem-solving. This allows for increased adaptability, strengthening potential, and self-confidence among young people in the dynamically changing Silesian Voivodeship. To effectively combat the NEET problem, young people must be given the opportunity to gain professional experience. Therefore, efforts should focus on offering young people internships, apprenticeships, and industry-specific courses and training, during which they have the opportunity to gain knowledge and experience. Equally important is the creation of programs for cooperation between schools and universities and employers to ensure that education meets the actual needs of the labor market. Such solutions allow for the gradual integration of young people into the labor market, simultaneously reducing the risk of professional exclusion and increasing their mobility and adaptability to new industries. The NEET problem often stems from family problems, therefore, supporting young people from low-income families by providing access to scholarships and social programs can significantly reduce the spread of the phenomenon. In the Silesian Voivodeship, the number of young people facing difficult circumstances may increase significantly due to layoffs related to

mine closures. Social marginalization of young people can be avoided through individual support in education and employment. In the Silesian Voivodeship, due to the energy transition process, tailored support programs should be developed, the situation of young people should be assessed on an ongoing basis, and cooperation between the business community and schools should be developed. This could help limit and even reduce the NEET problem in the Silesian Voivodeship.

5. Summary

The NEET problem, which affects young people who remain outside the sphere of education and employment, is one of the most serious challenges facing the contemporary labor market. In the Silesian Voivodeship, the NEET problem is gaining significant significance in the context of the ongoing energy transformation. The process of abandoning traditional industrial sectors, closing mines, and simultaneously developing industries based on renewable energy sources and modern technologies requires new competencies and skills from many current and future employees. A lack of preparation for changes in the labor market structure in the voivodeship may increase the risk of professional inactivity and the perpetuation of the NEET problem. The factors behind the NEET problem in the Silesian Voivodeship are related to the lack of access to appropriate training and support, which translates into the perpetuation of social and economic disadvantage. It should be noted that a long-term high NEET rate may further hinder the development of new economic sectors, slow the region's adaptation to the requirements of sustainable development, and limit the effectiveness of the energy transformation process. Regardless of the ongoing transformation, the consequences of the NEET phenomenon are multidimensional. Economically, they include increased youth unemployment, declining household income, and underutilization of human capital. Socially, they lead to the marginalization of youth, deepening inequalities, and perpetuating professional inactivity and social exclusion. Demographically and spatially, they result in increased migration of young people in search of work and the depopulation of peripheral areas. In turn, educationally and professionally, they are associated with exclusion from the education and training system, difficulties in re-entering the labor market, and the perpetuation of skills mismatches.

In the long term, the NEET phenomenon in the Silesian Voivodeship may lead to a slowdown in regional development, weakening social cohesion, and increasing the burden on social policy and the labor market, making it a serious challenge accompanying the energy transition.

Effectively reducing the NEET phenomenon in the Silesian Voivodeship requires an integrated approach, combining education, development of professional skills, and social support. These actions should be aimed at increasing youth motivation to continue their education and professional activity, developing their skills, and integrating them into the regional labor market, particularly in the context of the ongoing energy transition. A recommended direction for further research is to analyze the effectiveness of educational programs aimed at young people and to conduct in-depth research on practices in this area, implemented in regions similar to the Silesian Voivodeship, which are so severely affected by the energy transition. In summary, the NEET problem in the Silesian Voivodeship is complex, and reducing it requires coordinated action at the educational, social, and economic levels. Although the energy transition poses numerous challenges, it also creates a range of opportunities. Therefore, it is crucial that regional policy and local actions are focused on youth activation, skill development, and integration with the transformation processes. This will help mitigate the negative effects of NEET and leverage the potential of the young generation in the development of the voivodeship.

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INTERGENERATIONAL DETERMINANTS OF ORGANIZATIONAL LOYALTY: A COMPARATIVE ANALYSIS OF BB, X, Y and Z

Paweł KOZAKIEWICZ[1*], Justyna KOPCZYŃSKA[2]

[1] Institute of Economics, Finance, and Management, Jagiellonian University; pawel.kozakiewicz@uj.edu.pl, ORCID: 0009-0003-6154-5338
[2] Institute of Economics, Finance, and Management, Jagiellonian University; justyna.kopczynska@uj.edu.pl, ORCID: 0000-0001-6346-6578
* Correspondence author

Purpose: The objective of this article is to highlight intergenerational differences in organizational loyalty (from both behavioral and psychological perspectives) among Generations BB, X, Y, and Z. The empirical section considers two measurement perspectives: employee self-reports and employers' assessments of the importance of loyalty.
Design/methodology/approach: The study is quantitative in nature and is based on a nationwide survey (September 2025) using CAWI and CATI techniques on a representative random sample of economically active individuals, divided into two groups: employees (N = 500; working individuals aged 18-65) and employers/managers (N = 500; 29 private-sector industries). Generational affiliation was operationalized by year of birth (BB: 1946-1964; X: 1965-1980; Y: 1981-1995; Z: 1996-2012).
Findings: The results confirm the ambiguity of the loyalty category: as the age of respondents decreases, the percentage of high loyalty declines, and at the same time, the way loyalty is understood changes.
Research limitations/implications: Future research should consider factors such as industry, employment type, tenure, and job level. It would also be valuable to apply triangulation methods (e.g., interviews) and advanced statistical techniques for a deeper analysis of the data.
Practical implications: The findings highlight the need for managers to adapt their approach to different generations, particularly in terms of attitudes toward work, stability, and security. Standardizing the concept of loyalty across organizations could also help align how it is understood by both employers and employees.
Social implications: The evolving meaning of organizational loyalty—especially among younger generations—leads to greater job mobility and a shift toward a more conditional form of commitment. This may reshape the social role of work and employee well-being, increasing the importance of work–life balance, flexibility, and autonomy.
Originality/value: This study is original in its parallel analysis of employee and employer perspectives, as well as its distinction between psychological and behavioral loyalty. It offers a two-dimensional view of loyalty, capturing both its level and differences in its interpretation.
Keywords: loyalty, generations (BB, X, Y, Z), HR strategies, employee retention, organizational commitment.
Category of the paper: Research paper.

1. Introduction

Employee loyalty, given its crucial role in helping organizations achieve their goals, is considered one of the most important topics in organizational research (Morsli, Boudiaf, 2024). Traditionally, it has been understood as a lasting psychological bond between an employee and an organization (Buchanan, 1974). Contemporary changes in the labor market, particularly increased job mobility and aggressive competition, mean that loyalty understood in this way is no longer guaranteed (Ishaq et al., 2024). According to the results of the study presented in this paper, an important factor in these changes is the intergenerational perspective. The different generations present in the labor market differ not only in their value systems, expectations regarding the employer, and the relationships between employees and employers, but also in their differing perceptions of loyalty among employees and employers.

This article adopts a two-dimensional approach to employee loyalty (the psychological dimension – identification with and attachment to the organization, and the behavioral dimension – the willingness to remain in the organization despite alternative opportunities). The aim of this article is to highlight intergenerational differences in attitudes toward organizational loyalty among the generations currently in the labor market (BB, X, Y, Z), taking into account the perspectives of both employees and employers.

1.1. Employee Loyalty

Employee loyalty is one of the key issues in contemporary management science, particularly in the context of increasing job mobility and intensifying competition for talent in the labor market (Boxall, Purcell, 2016). It is most commonly defined as a sense of commitment to the organization, manifested by a desire to remain in the workplace long-term, identification with the organization's goals and values, and a willingness to take actions that go beyond the formal scope of duties (Meyer, Allen, 1997). In the literature, employee loyalty is treated as an element of the broader construct of organizational commitment, which in the classic model by Meyer and Allen comprises three complementary components: affective, continuance, and normative commitment (Meyer, Allen, 1991). Furthermore, loyalty has both a psychological dimension, encompassing attitudes, emotions, and the employee's level of identification with the organization, and a behavioral dimension, expressed in actual behaviors such as length of employment, limited propensity to seek alternative employment, or willingness to bear the costs associated with remaining in the organization (Becker, 1960). Integrating these two perspectives allows for a more complete understanding of the essence of loyalty and its significance for the stability and effectiveness of an organization's operations.

Understood in this way, employee loyalty takes on particular significance in the context of a demographically diverse workforce, where members of different generations coexist and may perceive their relationship with the employer differently.

A detailed analysis of the definition of employee loyalty has allowed for the identification of elements that recur in many approaches. These are (Moczydłowska, Smarżewska, 2023, p. 82):

- organizational commitment,
- employee identification with the organization,
- attachment to the organization,
- trust in the employer,
- employee retention within the organization,
- positive relations with the employer,
- pursuit of and identification with the organization's goals,
- remaining in the organization,
- employee dedication to the organization,
- acting in the employer's interest.

Theoretical conceptualization of loyalty, taking into account both its psychological and behavioral components, thus constitutes an important starting point for further research into its variations and determinants in contemporary organizations.

1.2. Loyalty as a generational trait identified in the literature

Currently, the labor market is dominated by members of four generations (Sidor-Rządkowska, 2018), which differ not only in terms of age structure but also in terms of work values, expectations, and professional development (Nowak, 2025). According to the classification adopted in the literature, these generations are: Baby Boomers (BB), Generation X, Y (the so-called Millennials), and Z (the digital generation).

Baby Boomers – I work to survive

They are often called workaholics, yet also team players (Jiří, 2016). They often view their "role" in society as a bridge between the past, present, and future. (Leach et al., 2013). Many members of this generation have spent their entire professional lives with a single employer. They are characterized by a strong fear of losing their job and professional standing. They are motivated by money, as well as a sense of stability and security, which can even lead to workaholism. They value formalism, obedience, and hierarchical structures. Their strengths include, above all, experience, a desire to share knowledge, availability, responsibility, reliability, conscientiousness, and emotional maturity (Chomątowska, Żarczyk-Dobiesz, 2018, p. 40). They believe that success in life stems from success in one's professional career, not from luck (Pritchard, Whiting, 2014).

Generation X – I live to work

Difficult economic conditions fostered a high degree of independence and problem-solving skills in them. The professional careers of members of this generation began during the political transition of the 1990s. It was a period of restructuring, bankruptcies, and mass layoffs, as well as documented violations of workers' rights by employers. This fostered a need to influence their organization's mission and a goal-oriented mindset (Reisenwitz, Iyer, 2009). Representatives of this generation therefore expect job stability today, without neglecting their personal development. They are focused on hard work and independence, which is why they value self-direction and autonomy (Nowak, 2025).

Generation Y (Millennials) – I work to live

Members of Generation Y focus on collaboration and teamwork. They are eager to share their knowledge and motivate one another. They are not fans of hierarchical workplace structures; they strongly prefer a collaborative atmosphere based on the exchange of information. Their career goals are generally short-term – they are ready to change jobs if a new one offers them growth and the opportunity to acquire new skills; they seek employers who share similar values. Ethical values are important to them, as are issues such as ecology and social justice (Nowak, 2025). They believe that higher education is a prerequisite for success in the labor market, which is why they have eagerly pursued higher education en masse.

Generation Z – the selfie generation

This is a generation that can no longer function without the internet and social media, which serve as their natural environment. They primarily derive their knowledge of the world from digital media, but struggle with processing information and drawing conclusions. They are characterized by high self-esteem and social awareness (Agárdi, Alt, 2022). They have no problem with multitasking. A professional career is not a value in itself for them; they value flexibility and adaptation to individual needs. They are characterized by mobility and knowledge of foreign languages. Work is meant to be a source of satisfaction and positive experiences (Krawczyk, 2024).

1.3. Generational Differences in Approaches to Employee Loyalty, Taking Psychological and Behavioral Aspects into Account

As society undergoes further transformations and the role that work plays in people's lives continues to evolve, so too does the approach to one of its cornerstones – loyalty.

For the Baby Boomer generation, loyalty to an employer is a moral obligation, a natural and unquestioned attitude. From a psychological perspective, loyalty here is based on a sense of duty toward work (Nowak, 2025). From a behavioral perspective, on the other hand, we see a pattern of long-term career commitments – often spanning the entire working life, from the completion of education through retirement (Jurek, 2014).

Members of Generation X have inherited many generational traits from their parents (the Baby Boomers). They, too, have been employed at a single company for years, strongly identifying with it, yet they view this work as a reward. They are therefore able to endure many inconveniences. They highly value stability and good pay, which in turn is linked to a sense of duty to ensure an appropriate standard of living for their families. They are characterized by responsibility and loyalty to the company (Krzemińska, 2021).

Loyalty among members of Generation Y looks quite different. It is no longer selfless but has become conditional, particularly with regard to career prospects, good pay, and mutual respect and fairness (Jurek, 2014). Changes are also evident in behavioral patterns – Generation Z members show a greater tendency to change jobs in search of new experiences and to develop their skills (Nowak, 2025). Compared to earlier generations, they have no problem changing jobs and, in fact, do so frequently – job security is not a priority for them (Krzemińska, 2021). A common phenomenon in this age group is so-called "job hopping," meaning frequent changes in employment (Khalil, 2021).

Loyalty, traditionally understood as long-term attachment to a single workplace, is losing its significance for members of Generation Z. They expect a job that offers high pay, without excessive demands or a negative impact on their personal lives (Nowak, 2025).

Table 1.
Psychological and behavioral perspectives on loyalty from a generational perspective

Generation	A psychological perspective on employee loyalty	A behavioral perspective on employee loyalty
Baby Boomers	Loyalty is a duty and a value in and of itself	A long-term relationship with a single employer, often the same one throughout one's entire working life
Generation X	Loyalty to one's employer as a source of financial stability and a guarantee of professional growth	Occasional job changes driven by a strong need for financial and personal stability
Generation Y (millennials)	Loyalty as a guarantee of self-development - toward values and/or one's chosen profession, rather than toward a single employer	Changing jobs as a natural part of professional development
Generation Z	Situational loyalty: based on one's own values, consistent with a sense of autonomy	The ability to change jobs freely depends on the current situation and conditions in the labor market

Source: Authors' own elaboration based on a review of the literature.

2. Methods, Results and Discussion

The analysis is based on a cross-sectional survey conducted using CAWI and CATI methods[1]. The survey was conducted in September 2025 on a nationwide sample with a total size of N = 1000, comprising employees (N = 500; economically active individuals aged

[1] The study was conducted by the Openfield research firm on behalf of Trenkwalder.

18-65) and employers (N = 500; representatives of 29 private-sector industries)[2]. Generational affiliation was determined in the employee group based on the respondents' year of birth (BB: 1946-1964; X: 1965-1980; Y: 1981-1995; Z: 1996-2012), although due to the age criterion, the study included only BB representatives who were economically active up to the age of 65. Comparing the perspectives of employees and employers made it possible to identify noticeable differences in how the category of loyalty is defined and in the assessment of the effectiveness of strategies used by companies to build and maintain employee loyalty, depending on the position held within the company – employer or employee.

The results of the study confirm that employee loyalty is not a homogeneous category today, but varies significantly depending on the employees' generational affiliation. As the age of employees decreases, a lower level of declared loyalty to the organization is observed. At the same time – which is of key importance from the perspective of our discussion – these differences do not apply solely to the intensity of loyalty, but also to a different way of understanding and interpreting the very concept of professional loyalty. This raises questions about what professional loyalty means in the contemporary labor market, how it should be defined and operationalized, and what strategies can contribute to building and strengthening it.

From the perspective of both employers and employees, the fundamental manifestation of loyalty remains high-quality work and commitment to fulfilling assigned duties. This response was selected by 52.4% of managers and as many as 69.4% of employees. This indicates that in the labor market, loyalty is still equated with availability, reliability, and a willingness to consistently perform tasks regardless of changing organizational and external conditions. Another key indicator of loyalty is the stated willingness to remain with the organization despite receiving alternative job offers, which takes on particular significance in the context of growing job mobility and a competitive labor market (41.6% of employers cited this, and similarly, 42.2% of employees). Compliance with the company's rules and organizational policies ranked third among employers' responses (41.2% of responses), interpreted as a manifestation of the internalization of the company's normative order and acceptance of the formal and informal rules governing the organization's operations. Meanwhile, for employees, a sense of responsibility for the team's or company's results proved to be more important (51.4% of responses), which may indicate their emotional commitment to the tasks entrusted to them.

[2] The survey included private-sector employees representing industries such as: research and development, banking and finance, biotechnology and chemistry, construction, consulting, journalism and media, energy, pharmaceuticals, surveying, geology and environmental protection, mining, internet and e-commerce, IT (administration, graphics, programming, web development, hardware), accounting, logistics, marketing, real estate, customer service and call centers, law, industrial manufacturing – other, construction industry: commercial and residential buildings, construction industry: industrial equipment and infrastructure, automotive industry (parts, sales, and repair services), advertising and PR, sales and trade, telecommunications and communications, transportation and logistics, insurance.

Despite minor differences (mainly in the prioritization of factors) – the overall understanding of the concept of loyalty is similar among today's employers and employees. They also share similar views on the effectiveness of various types of incentives, among which non-wage financial benefits (cited as an effective motivator by 35.6% of employers and 37.2% of employees) and competitive pay (effective according to 30% of employers and 26.6% of employees). Also among the top responses were flexible work arrangements (i.e., permission to work in a hybrid model and from home) and attention to the company's atmosphere and organizational culture (both responses garnered approximately 25% of the votes).

Noticeable differences between the perspectives of employees and employers emerge only when it comes to generationally diverse assessments of the effectiveness of strategies used to build and maintain professional loyalty. Employers recognize the need to diversify strategies for maintaining employee loyalty depending on the age of employees and, consequently, their generational affiliation. Over 60% of the surveyed managers (60.8%) agree with the view that actions in this area should be tailored to different generations, while only 9.4% of respondents seem to overlook this issue.

Interestingly, among the youngest generation of employees, there is a clear shift in priorities compared to the traditional understanding of organizational loyalty. According to employers, achieving a work-life balance is now of key importance to Generation Z, as indicated by as many as 51.5% of the managers surveyed. Next on the list were flexible working hours and the ability to work remotely (48.2% of responses), while factors such as stable pay and financial security (33.3% of responses) and the opportunity for rapid promotion and professional development within the organization (32%) ranked lower.

In the eyes of supervisors, Generation Y, often referred to as Millennials, presents a different set of expectations toward employers. For this group, stable pay and a sense of financial security play a key role in building loyalty, as indicated by as many as 48.7% of respondents. Equally important is the ability to maintain a work-life balance (48% of responses), which makes this generation similar to the youngest employees, while simultaneously shifting the emphasis clearly toward needs related to stability. Next on the list were various health programs and medical packages (43.4% of responses), which may indicate the growing importance of health security as an element of a long-term relationship with an employer.

Similar trends were observed among employees from Generation X and the Baby Boomer generation. According to supervisors, stable pay and financial security remain the dominant factors fostering loyalty in these groups as well, with a relatively high number of respondents (56.8%) highlighting these factors. The second most frequently cited category was health programs and medical packages (48.5%), while the ability to maintain a balance between work, private, and family life ranked third (36.6%).

Employers' overall assessment of changes in employee loyalty is clear. According to 66.8% of the surveyed managers, today's employees are less attached to their workplace than they were just five years ago. At the same time, respondents indicate that only 42% of employees are engaged in the organization's activities and identify with its principles. This means that more than half of employees exhibit at most a moderate level of loyalty, feeling no strong bond with the company nor viewing it as a place for long-term employment.

Comparing the perspectives of employers and employees also yields some interesting insights. First, employees rate their level of loyalty relatively higher than their supervisors do – nearly 60% of employees feel very highly or highly loyal to their employer (58% of responses), while only 8.4% feel little or no attachment to their current workplace. However, what is key is how these indicators vary across different age groups.

As many as 12.7% of surveyed Generation Z employees feel a low or very low level of loyalty toward their current workplace, which is linked to a lack of identification with the company and a real prospect of changing jobs, while among representatives of other age groups, this percentage is only 4.7% for Generation X and 8% for Baby Boomers. Contrary to appearances, however, this does not necessarily indicate a lack of commitment on the part of the youngest employees, but may be the result of operating in different, more dynamic conditions in today's labor market. Generation Z is entering the job market amid a high volume of job openings, flexible employment arrangements, and the normalization of job mobility. Consequently, loyalty to a single employer is no longer viewed as a rational career strategy. As research has shown, autonomy, the ability to maintain a work-life balance, and the alignment of work with one's personal values are relatively more important to young employees today. Among those over 50, the percentage of employees reporting a high level of loyalty reaches as high as 70%. For more experienced employees, the relationship with the organization is often long-term and stabilizing. Loyalty serves both an emotional and instrumental function here – it is linked to economic security, job continuity, and the protection of accumulated professional capital.

Interestingly, the surveyed employees largely confirm employers' intuitions. While for the youngest employees, the ability to maintain a work-life balance (53.2% of responses) and flexible work hours (and arrangements) (58% of responses), for older and more experienced employees, financial stability is key (as high as 72% of responses among Baby Boomers) and the ability to balance various life roles and responsibilities (in the case of Millennials, over one-third of respondents selected this option).

Members of Generation X and Baby Boomers also highly value respect for their professional competence and recognition of their many years of work experience (35.5% of responses for Generation X and as many as 44% for Baby Boomers) – organizations where they feel appreciated and their skills are recognized are viewed more favorably by them, and consequently, they can count on their dedication and commitment.

3. Conclusions

The conducted research clearly demonstrates that perceptions of loyalty toward an organization vary depending on the generation surveyed. Furthermore, declared loyalty is lower among the youngest employees. As many as 12.7% of Generation Z, 4.7% of Generation X, and 8% of Baby Boomers report low or very low levels of loyalty. In groups over 50 years of age, the percentage of strong attachment to the current workplace reaches as high as 70%.

The analysis also reveals differences in the perspectives of employees and employers. 58% of employees rate their loyalty as high or very high, while only 8.4% feel little or no attachment to their current workplace. At the same time, as many as 66.8% of employers claim that employee loyalty is lower than it was five years ago, and only 42% of employees demonstrate genuine commitment and identification with the organization.

The results also confirm that employers are highly aware of the need to tailor their approach to defining loyalty among employees from different generations. As many as 60.8% of employers recognize this, while nearly one in ten managers overlooks it. According to employers, the following factors are important to Generation Y: financial stability (48.7%), work-life balance (48%), and health benefits (43.4%). For Generations X and BB, on the other hand, the most important factors are job stability and financial security (56.8%) and health programs (48.5%). The ability to maintain a work-life balance ranked third (36.6%). An interesting observation also relates to the changing meaning of loyalty itself, shifting from loyalty to a given organization to the benefits derived from belonging to it. More than half of managers cite challenges related to the labor market situation as a source of difficulty in building loyalty, but as many as 60% of them believe that loyalty can be maintained by changing employment conditions.

4. Recommendations

The significant variation in the level of declared job loyalty depending on employees' age should prompt organizations to adopt a more nuanced approach to designing human resource management strategies. The particularly low percentage of Generation Z employees declaring high loyalty to their employer, coupled with significantly higher rates among older age groups, underscores the importance of valuing and retaining experienced employees as a stabilizing organizational resource. In light of the survey results, the key factors fostering professional loyalty remain elements of the fundamental quality of organizational relationships, particularly clear and transparent internal communication and the ability to flexibly adapt work

arrangements and schedules to employees' individual needs. Additionally, salary stability, a sense of financial security, and the ability to maintain a work-life balance also play a significant role. The results suggest that effective management of employee loyalty requires a shift away from uniform solutions toward integrated and diversified measures that address the differing expectations of specific employee groups, while simultaneously strengthening the fundamental conditions that foster their long-term commitment.

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HUMAN CAPITAL AS THE FOUNDATION OF OCCUPATIONAL SAFETY CULTURE IN AN ORGANIZATION

Sebastian KUBASIŃSKI

Poznan University of Technology, Institute of Safety and Quality Engineering;
sebastian.kubasinski@put.poznan.pl, ORCID: 0000-0001-6417-6150

Purpose: The purpose of this paper is to explore and analyze the relationship between human capital and occupational safety culture in manufacturing organizations, with particular emphasis on identifying the most influential dimensions of human capital.
Design/methodology/approach: The study adopts an exploratory case study approach combining quantitative survey data with interpretative analysis. Data were collected from 68 employees in two manufacturing companies using a proprietary questionnaire covering four dimensions of human capital and a synthetic assessment of safety culture. Correlation and regression analyses were applied as supportive tools.
Findings: The results indicate a positive relationship between human capital and safety culture. The relational and leadership dimensions were identified as the most influential, highlighting the role of communication, trust, and leadership practices. The role of competencies appears more complex and potentially indirect.
Research limitations/implications: The study is limited by a relatively small sample size and the exploratory nature of the research. Future studies should include larger samples and further validation of measurement tools.
Practical implications: Organizations should treat human capital as a strategic resource in safety management, with particular emphasis on leadership development and strengthening workplace relationships.
Social implications: Strengthening human capital contributes to improved employee well-being, organizational trust, and the overall quality of the work environment.
Originality/value: The paper contributes to the resource-based view by conceptualizing safety culture as an outcome of human capital configuration and identifying key dimensions influencing its development.
Keywords: human capital, safety culture, leadership, resource-based view, occupational safety.
Category of the paper: Research paper.

1. Introduction

Contemporary organizations operating in highly volatile environments and facing increasing regulatory requirements increasingly view occupational safety not only as an area of regulatory compliance, but also as an element of strategic management. The literature shows a shift from a reactive model focused on accident analysis to a proactive model based on prevention, participation, and building a mature safety culture (Bisbey et al., 2019a; Kubasiński, 2024).

At the same time, within the field of strategic management, the Resource-Based View (RBV) has developed as one of the dominant theoretical perspectives, assuming that sustainable competitive advantage results from the effective use of valuable, rare, inimitable, and organizationally embedded resources (Barney, 1991a). In this context, human capital plays a key role as an intangible resource encompassing knowledge, skills, experience, relationships, and employee attitudes (Gerhart, Feng, 2021a; Lubis, 2022).

In parallel, the literature on occupational safety emphasizes that safety culture is not merely the result of formal systems and procedures, but is shaped by leadership, communication, and employee involvement (He et al., 2019a). In particular, leadership is identified as a critical factor influencing employees' safety-related behaviors and the internalization of safety values (Pedrosa et al., 2025a).

Despite the growing body of research on safety culture and occupational health and safety management systems, the relationship between human capital and the maturity of safety culture remains insufficiently explored. Existing studies tend to focus either on leadership or safety climate, while relatively little attention is paid to human capital as a multidimensional construct integrating competencies, relationships, leadership, and organizational commitment.

Adopting a resource-based perspective allows safety culture to be interpreted as the result of the configuration and quality of human capital within an organization. This means that formal occupational safety management systems (e.g., ISO 45001:2018) can only be effective when supported by adequately developed human resources and social mechanisms.

This issue is particularly important in manufacturing companies, where the complexity of processes and exposure to risk factors require not only procedures, but also conscious and committed employees. The integration of safety management with human capital management is therefore becoming a strategic challenge (Melhem et al., 2024).

The aim of this article is to explore the relationship between human capital and occupational safety culture based on a case study of two manufacturing companies. It is assumed that human capital, understood as a multidimensional construct, influences the development of safety culture.

Based on this objective, the following research questions were formulated:

- RQ1: Is there a relationship between human capital and safety culture?
- RQ2: Which dimensions of human capital have the greatest influence?
- RQ3: Are there differences between organizations?

The following hypotheses were formulated:

- H1: There is a positive relationship between human capital and safety culture.
- H2: The relational and leadership dimensions have a stronger influence than other dimensions.
- H3: Organizational differences affect the strength of these relationships.

2. Human capital in the perspective of resource-based view (RBV)

Resource-based view (RBV) theory assumes that an organization's sustainable competitive advantage stems from the possession and effective use of resources with specific characteristics. In the classic approach, these resources should be valuable, rare, difficult to imitate, and difficult to substitute, while later developments also emphasize the requirement of organizational embeddedness (VRIN-O), i.e., the organization's ability to use them in management practice (Barney, 1991b). Contemporary analyses indicate that RBV remains one of the key paradigms of strategic management (Monson, 2024a).

Human capital is a key intangible resource within the RBV framework, encompassing knowledge, skills, and relationships that enable value creation. In manufacturing environments, its role extends beyond competencies to include communication, teamwork, and leadership, which are critical for effective safety management (Bhandari et al., 2020; Gerhart, Feng, 2021b).

In manufacturing companies, characterized by complex processes and exposure to risk factors, the importance of human capital goes beyond the competence dimension. Work safety depends not only on formal procedures, but also on the quality of communication, teamwork, and the internalization of safety values. In this context, organizational effectiveness is a consequence of the configuration of resources and organizational capabilities, rather than individual management instruments (Monson, 2024b).

The literature on the subject also emphasizes the role of human capital as an element linking management practices with organizational outcomes (Agha et al., 2025). In the area of work safety, this means that the effectiveness of formal systemic solutions is largely determined by the quality of human resources and their ability to implement requirements in practice.

This article assumes that human capital in the context of occupational safety can be analyzed in four complementary dimensions: competence, relationships, leadership, and commitment and learning.

This approach is consistent with the RBV perspective, which emphasizes the importance of resource configuration in management processes (Gerhart, Feng, 2021c). Furthermore, from the RBV perspective, safety culture can be interpreted as the result of the quality and structure of human capital functioning in an organization. Formal occupational safety management systems, e.g., those compliant with ISO 45001:2018, provide an organizational framework, but their effectiveness depends on the competencies, relationships, and leadership present in the organization. Consequently, human capital is the foundation of a mature safety culture.

3. Work safety culture in the organization

Work safety culture is one of the key constructs explaining differences in safety levels between organizations with similar business profiles, technical equipment, and formal procedures.

In modern terms, it is understood as a set of shared values, norms, beliefs, and practices related to safety that determine decision-making, communication, and behavior in routine and non-routine situations. Research indicates that safety culture is systemic in nature: it is the result of structural and psychosocial factors, and its development requires consistent leadership, organizational learning mechanisms, and consistent internalization of safety priorities (Bisbey et al., 2019b).

The literature emphasizes the need to distinguish between safety culture and safety climate. Safety climate is understood as employees' current perceptions of safety priorities and practices, while safety culture refers to a deeper and more enduring level of organizational values. Climate is therefore more sensitive to short-term changes, while culture provides a long-term interpretive framework for employee behavior. Research indicates that safety climate remains significantly associated with safe behaviors and safety outcomes, and in quantitative studies, it can be treated as a measurable indicator of culture (He et al., 2019b).

This article assumes that safety culture is overarching and relatively stable, while its empirical measurement is based on employee declarations and perceptions, typical of the safety climate approach. This solution is justified in the literature as a practical way of quantifying the soft aspects of safety (Churruca et al., 2021a).

In the systemic approach, safety culture is an element that reinforces the effectiveness of formal OHS solutions. The mere implementation of procedures, instructions, and standards does not determine the maturity of the culture. Implementation mechanisms such as leadership, employee participation, communication, and learning from near misses are of key importance (Pedrosa et al., 2025b).

It is worth noting that recent reviews of the implementation of ISO 45001 highlight the importance of leadership and employee participation as conditions for the effective functioning of the health and safety system, which directly corresponds to the concept of safety culture as an organizational value present in real operational decisions, and not just in traditional documentation (Alshreef, 2025).

In recent years, there has been growing interest in Safety Culture Maturity Models, which enable the diagnosis of the stage of development of an organization's culture and the planning of improvement measures. Systematic reviews show that maturity models most often describe the transition from reactive to proactive and generative phases, and their common denominators are: the role of leadership, consistency in enforcing standards, quality of communication, and organizational learning. At the same time, the literature points to methodological challenges such as the diversity of tools, the lack of full standardization of indicators, and the risk of superficial assessment if the measurement is not linked to real operational practices (Ayob et al., 2022).

In practice, measuring safety culture is complex and most often involves survey tools supplemented by other methods. Research emphasizes the multidimensionality of the construct and the need to consider components such as leadership, communication, and organizational learning (Churruca et al., 2021b).

At the same time, leading indicators are also being strongly developed, which allow the effectiveness of preventive measures to be assessed. The most valuable indicators are those that combine the organizational level (management, training, audits) with the behavioral level (reports, improvement initiatives), integrating quantitative data with the assessment of psychosocial aspects (Sadeghi et al., 2025).

In light of the approaches presented, safety culture can be treated as the result of the quality of human resources and the way they are deployed in everyday organizational practice. Integrative models emphasize that safety culture develops through the interaction of systemic elements (structures, processes, management mechanisms) with psychosocial factors (attitudes, trust, commitment). Thus, safety culture directly depends on the level of human capital understood as a configuration of competencies, relationships, leadership, and organizational learning (Bisbey et al., 2019c).

In view of the above, in this study, safety culture was adopted as a dependent variable, measured synthetically on the basis of an assessment of safety values and practices, while human capital was approached multidimensionally in order to identify the components that most strongly differentiate the level of safety culture in the companies surveyed.

4. Methods

The study was conducted in the fourth quarter of 2025 and adopted an exploratory case study approach, covering two manufacturing companies operating in Poland (Company A and Company B). The analyzed companies operate in the manufacturing sector and perform activities related to industrial processing and assembly, including mechanical operations and component integration. The case study model allows for an in-depth analysis of the relationships between variables within a specific organizational context, rather than seeking statistical generalizations.

The study combined elements of quantitative analysis with an interpretive approach, enabling both the identification of statistical relationships and their contextual explanation. The primary objective of the study was exploratory in nature and focused on identifying patterns and mechanisms linking human capital to safety culture.

Data were collected using an anonymous survey administered to employees representing various organizational levels, including operational staff, supervisors, and management. The respondents represented approximately 29.5% of employees in Company A and 25.3% in Company B, which provides a relatively high level of internal representativeness for an exploratory study. The companies were selected purposively based on their comparability in terms of industry and risk exposure, while differing in organizational structure.

The research tool was a proprietary questionnaire developed based on a literature review and previous studies. It consisted of five sections: competence dimension, relational dimension, leadership dimension, organizational commitment and learning dimension and assessment of workplace safety culture.

All items were measured using a five-point Likert scale (1 – definitely not, 2 – rather not, 3 – hard to say, 4 – rather yes, 5 – definitely yes).

The study adopted the following operationalization:

- Human Capital (HC) – treated as a multidimensional independent variable, calculated as the average of four dimensions:
  - HC1: competencies,
  - HC2: relationships,
  - HC3: leadership,
  - HC4: engagement and learning.
- Safety culture (SC) – treated as a dependent variable, calculated as the average of responses regarding safety-related values, norms, and practices. This approach enabled the analysis of both the general relationship between the level of human capital and safety culture, and the identification of the impact of individual dimensions of human capital.

A total of 68 valid questionnaires were collected. The sample included employees from various organizational levels, which allowed for capturing diverse perspectives on safety-related practices.

Due to the exploratory nature of the study and the limited sample size, statistical analyses (correlation and regression) were treated as tools to aid in identifying relationships, rather than as a basis for strict generalization. This approach is consistent with exploratory research designs commonly applied in organizational and safety culture studies. Therefore, the results should be interpreted with caution and in relation to the specific organizational context.

The reliability of the research instrument was assessed using Cronbach's alpha. Although the overall scale demonstrated acceptable internal consistency, lower values observed in some subscales indicate a need for further refinement of the measurement instrument in future studies.

5. Results

The study covered a total of 68 employees from two manufacturing companies, including 31 respondents from Company A and 37 from Company B (Table 1). The sample structure included:

- operational employees – 63,2% (n = 43),
- middle management (foremen/supervisors) – 19,1% (n = 13),
- senior management – 17,6% (n = 12).

Table 1.
Structure of the research sample by position

Workstation	A (N)	A (%)	B (N)	B (%)
Operational employees	17	54,8	26	70,3
Foremen/supervisors	6	19,4	7	18,9
Senior management	8	25,8	4	10,8
Total	31	100	37	100

Source: own study.

A comparative analysis revealed differences in the structure of positions between organizations. In Company A, the share of management staff was higher (25.8%), while in Company B, operational employees dominated (70.3%). However, these differences do not affect the overall sample size and allow for comparative analyses to be carried out.

5.1. Level of human capital and safety culture

In the first stage of the analysis, the level of human capital (HC) and safety culture (SC) in both companies was assessed. The average values were as follows:

- Company A:
  - Human capital (HC) = 3,88,
  - Safety culture (SC) = 3,98.
- Company B:
  - Human capital (HC) = 3,98,
  - Safety culture (SC) = 3,89.

Minor differences between companies were observed; however, overall levels of human capital and safety culture remained comparable.

Table 2.
Average values of human capital and safety culture dimensions

Dimension	Company A	Company B
HC1 – Competency	4,05	4,09
HC2 – Relational	4,00	3,84
HC3 – Leadership	3,65	3,85
HC4 – Engagement	3,81	4,15
HC – Total	3,88	3,98
SC – Safety Culture	3,98	3,89

Source: own study.

An analysis of individual dimensions of human capital showed (Table 2):

- the highest values in the competence dimension (HC1),
- relatively lower values in the leadership dimension (HC3)

structural differences between organizations: in company A, the relational dimension was stronger, while in company B, leadership and commitment received higher ratings.

5.2. Analysis of the relationship between human capital and safety culture

In order to verify the main hypothesis, a correlation analysis was conducted between the synthetic human capital index and safety culture. The following correlation coefficients were obtained:

- Company A: c = 0,48,
- Company B: c = 0,70,
- Entire sample: c = 0,58.

The results indicate a significant positive correlation between the level of human capital and safety culture, with this correlation being stronger in Company B.

In the next step, a linear regression analysis was performed, in which the dependent variable was safety culture and the independent variable was a synthetic human capital index. The model proved to be statistically significant ($p < 0.001$), and the coefficient of determination

was $R^2 = 0.335$, which means that human capital explains 33.5% of the variability in the level of safety culture.

5.3. The impact of individual dimensions of human capital

Multiple regression analysis taking into account four dimensions of human capital showed that the model explains 44.2% of the variability in safety culture ($R^2 = 0.442$; $p < 0.001$). A statistically significant impact was demonstrated by:

- relational dimension ($\beta = 0,33$; $p = 0,020$),
- leadership dimension ($\beta = 0,39$; $p = 0,012$).

Table 3.
Impact of human capital (HC) dimensions on safety culture (SC)

Dimension	β	p
HC1 – Competency	insignificant	0,908
HC2 – Relational	0,33	0,020
HC3 – Leadership	0,39	0,012
HC4 – Commitment	insignificant	0,995
R^2	0,442	—

Source: own study.

No statistically significant effect of competence was observed (Table 3). However, this result should be interpreted with caution due to measurement limitations and the exploratory nature of the study.

5.4. Analysis of differences between companies

In order to verify the differences between the organizations, a Student's t-test for independent samples was performed. No statistically significant differences were found in either the level of human capital ($t = -1.24$; $p = 0.220$) or the level of safety culture ($t = 0.71$; $p = 0.480$).

These results indicate that despite differences in the structure of human capital dimensions and the strength of correlations, the overall level of the analyzed variables remains similar in both companies.

5.5. Reliability of the research tool

The reliability of the human capital scale (20 items) was assessed using Cronbach's alpha coefficient. A value of $\alpha = 0.82$ was obtained, indicating high internal consistency of the tool. For individual dimensions, the following values were obtained:

- HC1 – $\alpha = 0,59$,
- HC2 – $\alpha = 0,75$,
- HC3 – $\alpha = 0,69$,
- HC4 – $\alpha = 0,57$.

For the safety culture scale, $\alpha = 0.66$ was obtained. The values obtained should be considered acceptable in an exploratory study, taking into account the number of items in each subscale.

6. Discussion

The study's findings indicate that human capital plays a significant role in shaping workplace safety culture. However, it is important to note that its impact should be interpreted in a multidimensional way and with due consideration for the specific context.

The results suggest that relational and leadership dimensions have a greater impact than formal competencies. This indicates that safety culture emerges primarily through social mechanisms such as communication, trust, and leadership practices, rather than solely through knowledge.

This interpretation is consistent with previous research emphasizing the importance of leadership and communication in shaping safety-related behaviors (He et al., 2019; Pedrosa et al., 2025). Leadership translates formal safety requirements into practice, while relational factors support the internalization of safety-related values.

An important aspect of the results is the lack of a statistically significant effect of the competence dimension. Rather than interpreting this result as evidence of the irrelevance of competence, it should be approached with caution. The relatively lower reliability of the measurement scale for this dimension suggests that the observed effect may partly stem from limitations of the research tool. Therefore, competencies should still be considered an important element of human capital, although their role may be indirect or mediated by social and organizational mechanisms.

A comparison of the two companies provides additional insights. Although no statistically significant differences were observed in the overall level of human capital and safety culture, differences in the strength of the relationships between variables suggest that the organizational context plays a key role. In particular, differences in workforce structure and management practices may influence how human capital translates into safety culture.

From an RBV perspective, the results indicate that not only the level of human capital but also its configuration determines its effectiveness. Safety culture can therefore be interpreted as the result of interactions between various dimensions of human capital.

Due to the exploratory nature of the study and the limited sample size, the results should be interpreted with caution. They do not allow for broad generalizations but provide valuable insights into the mechanisms linking human capital and safety culture.

7. Summary and limitations

The aim of this article was to analyze the relationship between human capital and occupational safety culture based on a case study of two manufacturing companies, using the Resource-Based View (RBV) as a theoretical framework.

The findings indicate that human capital is positively associated with safety culture; however, its impact varies across dimensions. The relational and leadership components emerged as the most influential, while the role of competencies appears more complex and potentially indirect.

The results suggest that safety culture should be understood not merely as a function of formal qualifications or compliance, but as an outcome of social and organizational mechanisms embedded in everyday work practices. In this context, safety culture reflects both the presence and configuration of human capital.

From a theoretical perspective, the study extends the RBV approach in occupational safety research by emphasizing the importance of relational and leadership dimensions. Practically, the findings highlight the need to strengthen communication, trust, and leadership practices as key drivers of safety performance.

The study has several limitations. First, the relatively small sample size (68 respondents from two organizations) limits the generalizability of the results. The findings should therefore be considered preliminary. Second, the use of a self-report questionnaire may introduce bias in the responses. Future studies should incorporate additional data sources. Third, the reliability of some measurement scales was below the recommended threshold, indicating a need for further refinement of the research tool.

Despite these limitations, the study provides valuable insights into the relationship between human capital and safety culture and contributes to the RBV perspective in occupational safety management.

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LABOUR PRODUCTIVITY AND THE AGE OF THE FARM OPERATOR IN POLAND

Renata KUBIK[1], Anna KOBIAŁKA[2*]

[1] University of Life Sciences in Lublin; renata.kubik@up.edu.pl, ORCID: 0000-0002-8227-945X
[2] University of Life Sciences in Lublin; anna.kobialka@up.edu.pl, ORCID: 0000-0001-7788-7736
* Correspondence author

Purpose: The main objective of this study was to determine how the age of the farm operator in Poland affects the level of labour productivity. In addition, the study also examined changes in labour productivity over time and included a causal analysis.
Design/methodology/approach: Labour productivity was measured as gross farm income (GFI) per annual work unit (AWU). Indicator changes over time were assessed using an index of dynamics, and a causal analysis of the changes observed during the study period was carried out using the functional method.
Findings: The analysis indicates that the highest labour productivity was achieved by farm operators in the 30-39 age group, amounting to PLN 102,261.53 per AWU in 2023. The curve illustrating the relationship between age and labour productivity has a convex shape, resembling an inverted U. Labour productivity increased across all age groups during the study period. Farms managed by the youngest operators recorded the highest increase in labour productivity, with a 53% growth. The analysis of changes in the labour productivity indicator showed that the overall increase in labour productivity of Polish farms between 2014 and 2023 was primarily driven by an increase in the capital-labour ratio, and, to a lesser extent, by higher productivity of fixed assets.
Research limitations/implications: An interesting direction for future research could be an in-depth analysis of the extreme age groups of farm operators. This would allow for a better understanding of intergenerational relations and their effect on production outcomes and farm labour productivity.
Social implications: The results indicate that all analysed age groups of farm operators require systemic support aimed at improving labour productivity in agriculture. Particular attention should be given to farmers aged above 50.
Originality/value: This article fills a gap in research concerning the relationship between age and labour productivity in Polish agriculture. Existing studies have mainly focused on the ageing of farmers and the need to support young agricultural producers. This publication highlights the remaining age groups and identifies possible measures that can be undertaken.
Keywords: labour productivity, agriculture, age.
Category of the paper: Research paper.

1. Introduction

In every economic system or process, the human factor plays a fundamental role (Ślusarz, 2024). The significance of human involvement in the production process and in the development of enterprises was recognised more than two centuries ago; however, it was only in the twenty-first century, together with dynamic changes in the operating mode of organisations, that human capital came to be regarded as the most important of all resources (Załoga, Ciekanowski, 2017).

It should be emphasised that the importance of the human factor and its impact on outcomes increase with the overall level of economic development. This is reflected in the ability to adapt effectively to constantly changing natural, economic, organisational and social conditions. Agricultural holdings, like all economic entities seeking to remain on the market and develop, must undergo change (Gradziuk, 2008).

Many authors emphasise that the efficiency with which farm resources are used largely depends on the individual, particularly their knowledge, experience, skills, ambitions, and motivations, beliefs and predispositions (Kozera, 2010; Grzybowska, 2015). Such an approach is consistent with the definition of human capital adopted by the OECD, according to which human capital refers to the knowledge, skills, competences and attributes of individuals that facilitate the creation of personal, social and economic well-being (Keeley, 2007). In agriculture, human capital is limited to the owners of agricultural holdings and their immediate family members, including potential successors (Brodzińska, 2017).

Food security remains a key issue in the contemporary world (Nowak et al., 2023). To ensure food security, it is necessary not only to secure sufficient agricultural land and increase food production, but also to maintain and develop human resources.

At present, this task is difficult to accomplish mainly due to unfavourable demographic changes, such as population ageing and the lack of generational succession, as well as the movement of labour to other sectors of the economy, which ultimately leads to the abandonment of agricultural production.

Therefore, particular attention should be paid to the role of human capital in the specific and important sector of the economy that agriculture represents, as well as to the values that determine the direction of change and shape the competitive advantage of entities operating in agriculture (Kołoszko-Chomentowska, 2008).

The article is structured as follows: the next section presents a literature review on the impact of farmers' age on labour productivity, followed by an overview of the demographic situation in Polish agriculture compared with that of the European Union (EU), the research material, and the methods. The remaining sections provide the results obtained and the concluding remarks.

2. Literature review

Farmers' age is considered an important factor shaping labour productivity and the capacity of farms to adopt new technologies. Studies in this area demonstrated that the relationship between age and productivity is generally non-linear: productivity increases with experience, reaches a maximum in middle age, and then gradually declines (Karinika-Murray et al., 2024). This mechanism has been empirically confirmed by the studies of Tauer (2019) and Tauer and Lordkipanidze (2000), which observed an inverted U-shaped curve, where both young and older farmers exhibit lower efficiency than middle-aged agricultural producers.

In recent years, research on human labour productivity in agriculture has primarily focused on the issue of workforce ageing (Tong et al., 2024; Zhang et al., 2025). It is anticipated that an increasing share of older farmers in the population structure of agricultural holdings will lead to a decline in labour productivity, particularly in less mechanised farms (Satoła, 2019; Liu et al., 2023). Furthermore, several authors (e.g. Tong et al., 2024; Kasztelan et al., 2019) indicate that workforce ageing hampers technological progress and reduces the efficiency of resource allocation, negatively affecting total factor productivity in agriculture. One of the most frequently cited reasons for older farmers' reluctance to modernise is their lower propensity to invest, especially over the long term (Russo et al., 2024; Hamerska, Roczkowska-Chmaj, 2008). Research by Brown, Daigneault and Dawson (2019) confirms that investment decisions are less frequently undertaken on farms operated by older farmers, as they tend to be more risk-averse and less willing to adopt innovations. Older farmers, in contrast, tend to operate their farms according to established family patterns, continuing production until formal requirements are met, and then transferring the farm to successors upon retirement or pension (Hamerska, Roczkowska-Chmaj, 2008).

There are also other studies which provide slightly different findings. Liu et al. (2020) found that the ageing of the agricultural workforce has no negative effect on agricultural production. According to these authors, a decline in physical strength with age clearly compromises productivity. On the other hand, older farmers tend to have more experience in agricultural production than younger workers, which contributes to improved productivity. Due to their experience, they can rely on their knowledge and skills to deploy inputs more effectively (Latruffe, 2010).

The literature review indicates that labour-related issues in agriculture are a significant area of interest among researchers. Farmers' age is an important determinant of their productivity, particularly in the context of an ageing workforce. However, the relationship between age and labour input productivity in Polish farms has not been examined in recent studies. For this reason, it was considered important to assess how the age of the farm operator relates to the level of and changes in labour productivity of agricultural holdings in Poland, which constitutes the main objective of this article. Therefore, the following research hypotheses were formulated:

1. The relationship between a farmer's age and their labour productivity is non-linear (inverted U-shaped curve).
2. The youngest farm operators achieve the highest growth rate in labour productivity due to a higher rate of increase in the capital-labour ratio compared with other age groups.

3. The Demographic Situation of Agriculture in Poland in the Context of the European Union

Over the last decade, employment in agriculture in the EU declined from nearly 10,000 thousand to approximately 7,205 thousand, representing a decrease of almost 26%. In Poland, agricultural employment decreased by approximately 500 thousand, meaning that the rate of decline was slightly stronger and amounted to nearly 28% (Fig. 1). In 2023, the share of employment in agriculture in Poland accounted for approximately 8% of total employment (GUS, 2024).

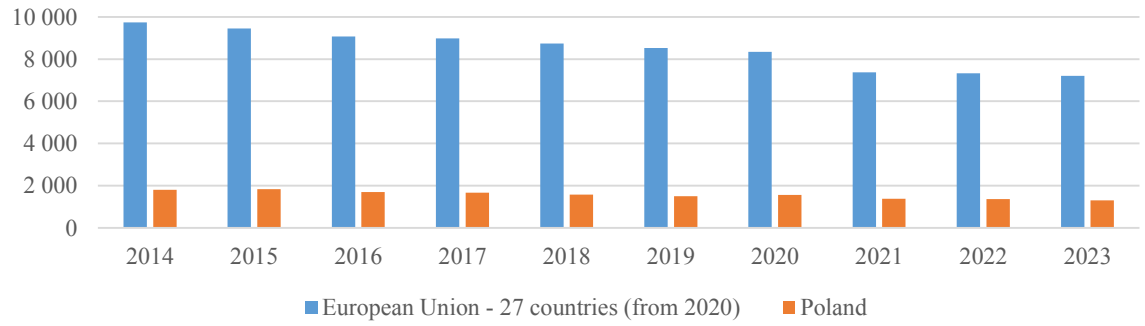

Figure 1. Employment in agriculture in the EU and Poland (thousand persons) from 2014 to 2023.
Source: Compiled by the author based on Eurostat.

Similar downward trends were also observed regarding the Gross Domestic Product (GDP) share of agriculture. In 2023, Polish agriculture generated 3.3% of the GDP, while industry and services each accounted for approximately 24%. The value added generated in agriculture increased from EUR 7 billion to more than EUR 22 billion over the past two decades. Over the twenty years following accession to the European Union, the added value generated by Polish agriculture increased from 3.7% to 8% of the total value added of agriculture in the EU, corresponding to a shift from eighth to fifth place (Instytut Finansów Publicznych, 2024).

In the age structure of employment across most sectors of the economy, middle-aged, that is, 40-64 years old workers were predominant (Fig. 2). In the agricultural sector, young people (15-39 years) accounted for nearly 32%. Middle-aged workers were the most numerous group, representing nearly 61%. The oldest farmers, aged over 65, accounted for just over 7% of the agricultural workforce in the EU.

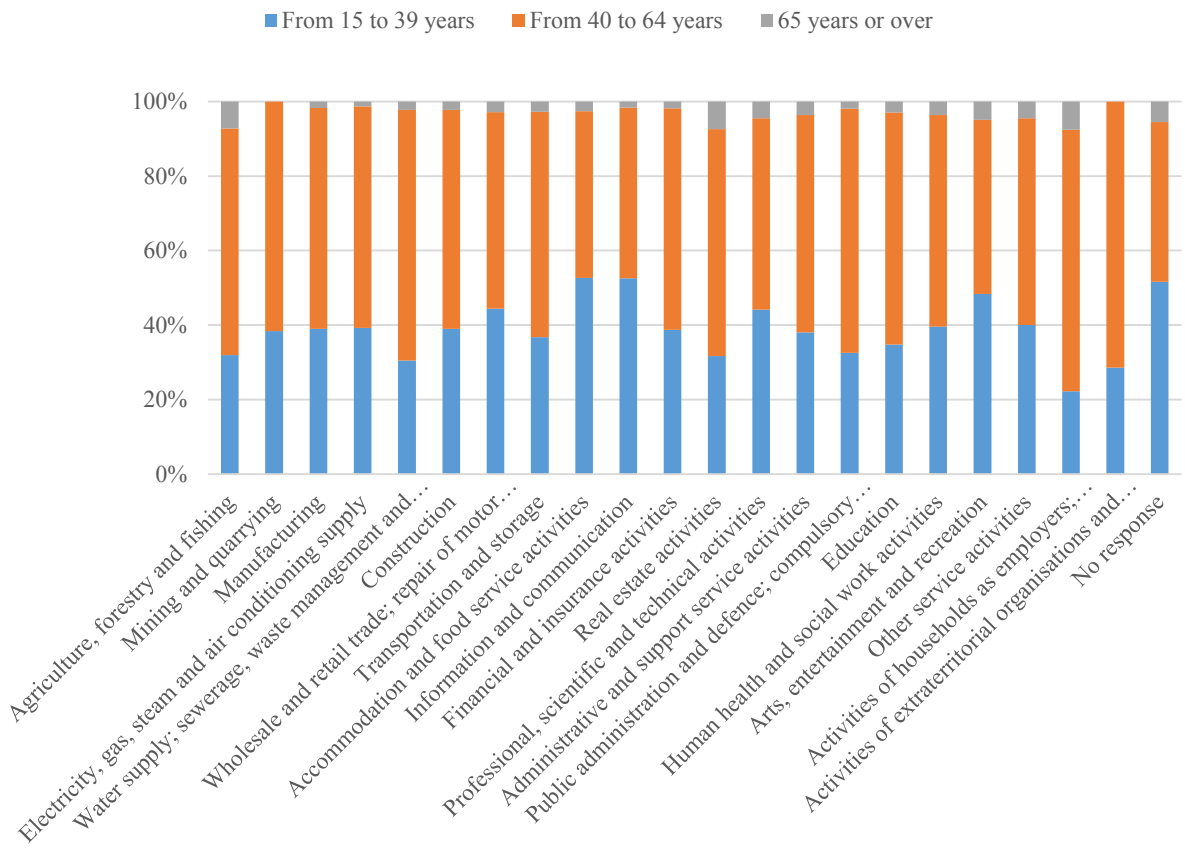

Figure 2. Employment structure by age in the EU economic sectors in 2023.

Source: Compiled by the author based on Eurostat.

Agriculture in the EU Member States is characterised by an ageing demographic profile, with the average age of farmers exceeding 57 years since 2020. Approximately 30% of agricultural holdings are managed by farmers aged below 40. Both the number and the share of young farm operators have been declining, which may be viewed as part of the broader trend of population ageing in the EU, particularly in rural areas (Commission…, 2026).

Significant differences in agricultural demographics exist among Member States. The largest number of farmers in the EU is recorded in Romania, which also translates into the highest percentage (over 33%) of the overall structure of farmers in the EU. Poland and Italy rank next, each accounting for approximately 14% of the EU farmer population. Spanish farmers constitute slightly less than 10% of the total population, Greek farmers more than 5%, and French farmers slightly below 5%. Farmers from the remaining countries together account for just under 19% (Fig. 3).

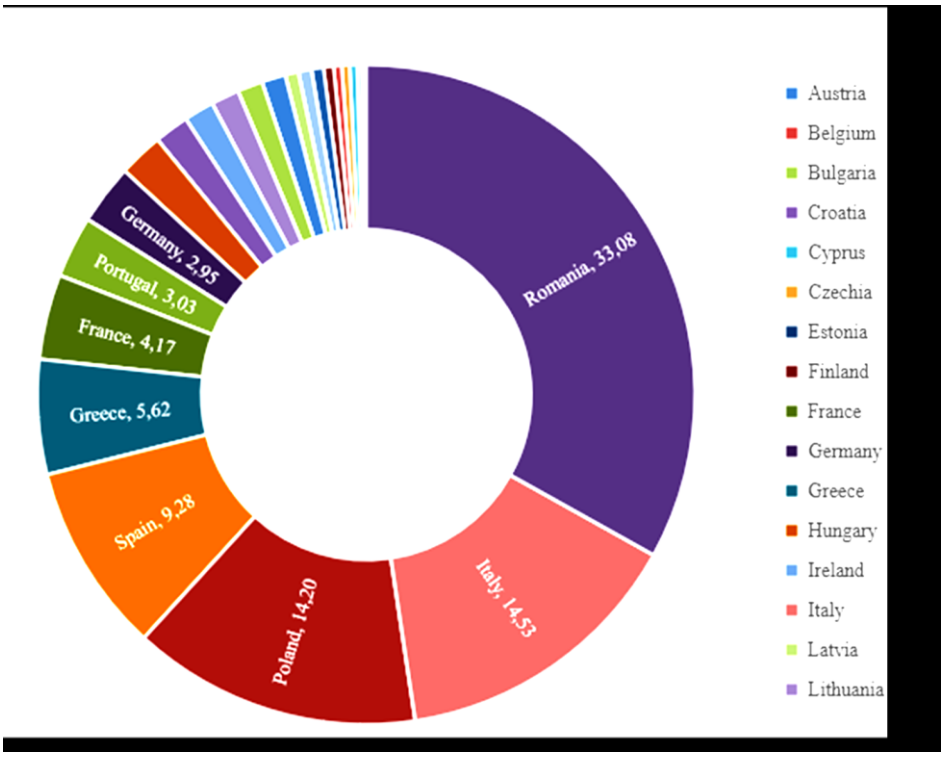

Figure 3. Structure of farmers in EU countries in 2023 (in %).

Source: Compiled by the author based on Agri-food Data Portal.

These relationships are also reflected in the structure of young farmers in the EU. The largest number of young farmers in the EU is found in Romania, accounting for 27% of the total population of young farmers in the EU, followed by Poland with 25% and Italy with 10%. Consequently, the overall EU results are strongly influenced by the situation in these Member States. The share of agricultural holdings managed by individuals under the age of 40 ranges from 23% in Austria to only 5% in Cyprus. The average age of farm operators is highest in Southern Europe (Commission…, 2026).

4. Material and Methods

The analysis presented in this article was carried out using unpublished and legally protected data from Poland, covered by the European Farm Accountancy Data Network (FADN). Data from the FADN system are used to shape the EU Common Agricultural Policy. Calculations were performed at the Institute of Agricultural and Food Economics – National Research Institute (IERiGŻ–PIB). A limitation of the research is that the FADN's scope is restricted to commodity farms, which are characterised by market-oriented production and a minimum production value of EUR 4,000. The research period extends from 2014 to 2023. The data used in this article were the most recent available in the FADN database. All calculations were performed taking into account the following age groups (Tab. 1).

Table 1.
Age groups and sample sizes in 2014 and 2023

Age	Sample size	
	2014	2023
<18-29)	823	853
<30-39)	2618	2395
<40-49)	3776	3090
<50- 59)	4111	2945
≥60	793	1738
Total	12121	11029

Source: Authors' elaboration based on the FADN.

Labour productivity of Polish farms was assessed using the labour productivity index. The numerator of this index included gross farm income (GFI), as indicated in the literature as one of the most frequently used categories for analysing the efficiency of production factors (Kubik, Zakrzewska, 2024). GFI includes the total production value minus direct and overhead costs (excluding external factor costs such as depreciation, hired workforce, lease payments, and interest), adjusted for the balance of subsidies and taxes related to operating activities (Pawłowska-Tyszko, Osuch, Płonka, 2023). The denominator of the index consisted of annual work units (AWU).

In the next step, the dynamics of labour productivity were assessed, taking into account the direction and magnitude of the effects of the following factors:

a) capital-labour ratio (*FA/AWU*),

b) productivity of fixed assets (*TO/FA*),

c) gross farm income ratio (*GFI/TO*).

The impact of changes in individual factors on the labour productivity development in the analysed period was estimated using the functional method (Kubik, Zakrzewska, 2024). This method enables the identification of the sources of deviations in the analysed phenomenon and the determination of the direction and magnitude of the impact of individual factors (Sierpińska, Jachna, 2004).

5. Results and Discussion

Gross farm income per full-time worker in the analysed agricultural holdings was highest in the 30-39 age group in both 2014 and 2023 (Fig. 4). Labour productivity in this group amounted to PLN 76,313.67 per AWU and PLN 102,261.53 per AWU, respectively.

In subsequent cohorts, labour productivity declined in the group of farms managed by farmers aged over 60, where the value of the indicator was higher than that recorded for the youngest age group (18-29 years) in 2014. In 2023, in contrast, it was slightly lower than in that group. Such a phenomenon has not been previously reported in the literature. This situation

may result from farms being effectively operated by successors, i.e. young people, even though formal ownership remained with representatives of the older generation.

The resulting curve illustrating the relationship between age and labour productivity is convex, initially rising and then declining as the farmer's age increases. At later stages of life, farm operators tend to reduce their involvement in farm management in favour of ensuring material stability, increasing consumption, and allocating more time to rest. Particularly in the absence of a successor, farmers often withdraw from agricultural activity by reducing the scale of operations in order to decrease the workload, leasing out or selling land, and cultivating the remaining land less intensively. Lobley et al. (2010) describe this phenomenon and refer to it as the "retirement effect". The resulting curve is consistent with the findings reported by Tauer (2019), which show that the highest labour productivity was achieved by the 35-44 age group and that the curve takes the form of an inverted U-shape. This supports the first hypothesis concerning the non-linear relationship between farmer age and labour productivity.

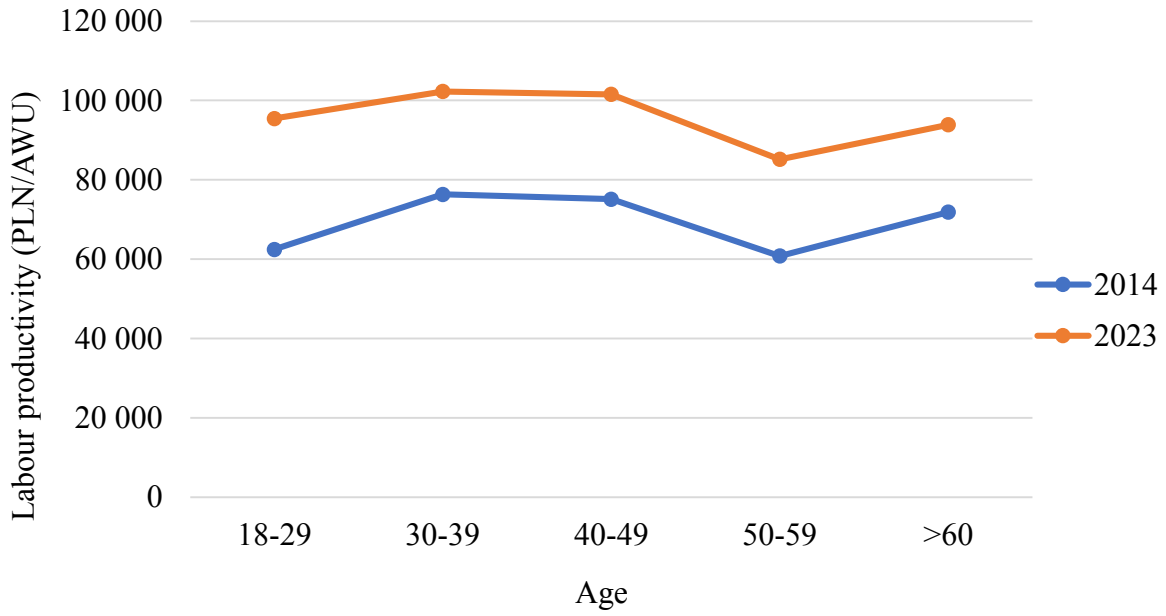

Figure 4. Labour productivity (PLN/AWU) by age groups in 2014 and 2023.

Source: Authors' elaboration based on the FADN.

The labour productivity dynamics indices for all age groups exceeded 100%, with an average value of 138%. This means that in all analysed farms, each full-time worker contributed to generating a higher GFI in 2023 compared to 2014. The largest increase in labour productivity over the analysed period was recorded in farms managed by the youngest farm operators (dynamics = 153%). Notably, farms with the highest labour productivity levels were characterised by dynamics below the average. Farms from the second and third cohorts recorded indices of 134% and 135%, respectively. In contrast, the lowest dynamics were observed in farms managed by the oldest farmers (131%).

The results of a deterministic analysis of changes in labour productivity ratio showed that the observed overall increase in the labour productivity of agricultural holdings Poland between 2014 and 2023 was 96% due to an increase in the capital-labour ratio, 33% due to an increase in the fixed assets productivity and 28% due to an increase in the share of gross farm income in total output (Fig. 5).

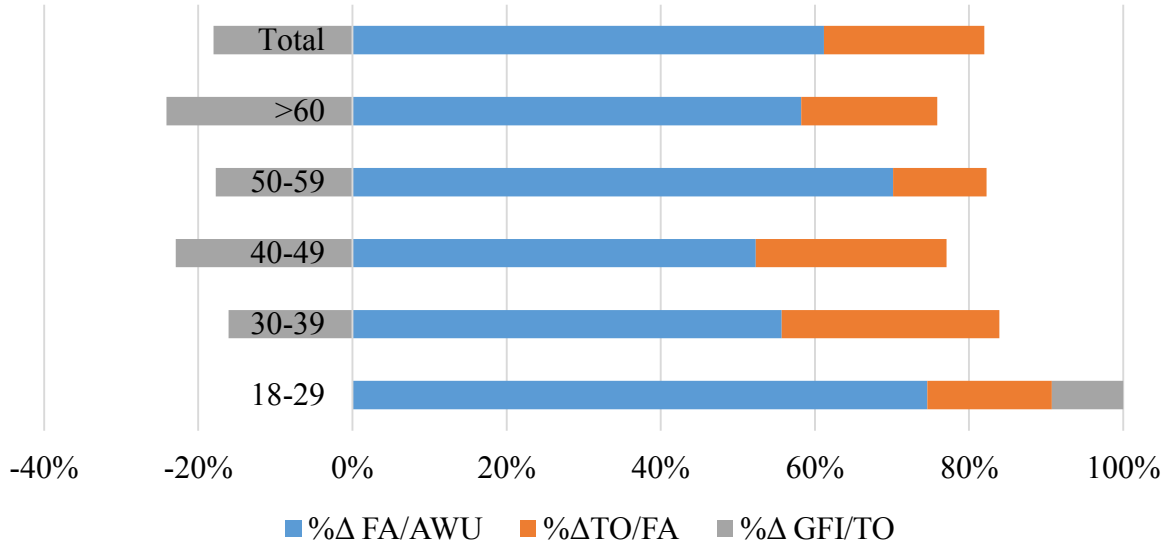

Figure 5. The impact of changes in the capital-labour ratio (ΔFA/AWU), productivity of fixed assets (ΔTO/FA), and the gross farm income ratio (ΔGFI/TO) on changes in labour productivity (ΔGFI/AWU) by age group of farm operators in Poland in 2014–2023 (PLN/AWU).

Source: Authors' elaboration based on the FADN.

The most significant factor influencing labour productivity across all age groups was the capital-intensive factor (capital–labour ratio), although, considering the absolute value, the differences between cohorts were not substantial.

The contribution of the gross farm income ratio was negative for labour productivity changes in almost all age groups. Only in the youngest cohort was this parameter higher in 2023 than in 2014, indicating that this group is able to generate a larger surplus from farm operations. This may result from younger farm owners seeking highly profitable agricultural production directions and, consequently, more flexibly adapting to turbulent market conditions. Based on the results obtained, the second hypothesis cannot be fully supported. During the analysed period, the youngest farm operators achieved the highest growth rate of labour productivity, but this was not due to a higher dynamics of the capital–labour ratio than in other age groups. Instead, it resulted from the favourable impact of the gross farm income ratio relative to total output.

Farmers from cohorts with the highest labour productivity (2 and 3) stood out during the analysed period due to the highest contribution of fixed asset productivity to growth. More experienced farmers are often more attached to their chosen production direction (e.g. cereal cultivation) and the resulting specialisation, which allows for better adaptation and utilisation of available farm machinery.

6. Summary

The study aimed to determine labour productivity level, measured as gross farm income per annual work unit, of agricultural holdings in Poland depending on the age of the farm operator, and the reasons for its change between 2014 and 2023.

The analysis indicates that the highest labour productivity was achieved by farm operators in the 30-39 years group and amounted to PLN 102,261.53 per AWU in 2023. The curve illustrating the relationship between age and labour productivity has a convex shape, resembling an inverted U, which supports the first hypothesis.

It was noted that the group of farmers aged over 60 achieved higher labour productivity than the 50–59 age group during the analysed years, and also exceeded that of the youngest age group (18–29 years) in 2014; although, in 2023, the indicator was slightly lower than for the youngest farmers. This may be due to situations in which a young farmer is effectively managing the farm while the parents (aged over 60) remain the formal owners.

During the analysed period, labour productivity increased across all age groups. The largest growth was recorded in farms managed by the youngest operators (an increase of 53%), which supports the first part of the second hypothesis. However, the second part of this hypothesis cannot be confirmed, as the growth in labour productivity was achieved due to a higher increase in the gross farm income ratio than in other age groups, rather than through changes in the capital–labour ratio. Young farmers do not immediately invest in new technologies. This may result from a lack of experience or resources for investment, or from seeking alternative ways to improve farm profitability (e.g. choosing the most profitable production directions). As reported by Hamerska and Roczkowska-Chmaj (2008), this situation may also arise because, in many cases, young farmers become owners only formally, while the actual management practices continue to be determined by their parents.

The analysis of changes in the labour productivity ratio showed that, for all age groups, the overall increase in labour productivity of Polish farms between 2014 and 2023 was primarily driven by an increase in the capital-labour ratio, and, further, by higher productivity of fixed assets.

In summary, encouraging young people to become more actively involved in agricultural production is a positive step towards increasing labour productivity. The average income in EU commercial agricultural holdings managed by young farmers is rising, although it remains lower than in other age groups (European Commission, 2025). Supporting young farmers and attracting young people to work in agriculture is one of the objectives of the European Commission's Strategy for generational renewal in agriculture under the planned Common Agricultural Policy for 2028-2034 (Commission…, 2026). Advisory programmes and support should also be targeted at other age groups. In particular, programmes that promote the continuation of investments by farmers aged over 50 would be highly beneficial, as they could help prevent a decline in labour productivity.

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INTERPERSONAL RELATIONSHIPS AND JOB SATISFACTION AMONG POLISH EMPLOYEES: THE ROLE OF GENDER AND GENERATION

Dorota KUREK

War Studies University; d.kurek@akademia.mil.pl, ORCID: 0000-0002-2346-6108

Purpose: The primary objective of this research was to identify the relationship between the quality of interpersonal relationships and the job satisfaction among Polish employees, considering demographic variables such as gender and generational affiliation.
Design/methodology/approach: The study **involved** a sample of 384 working Poles and was conducted using the CAWI (Computer-Assisted Web Interview) technique. The sample was diversified by gender and generation.
Findings: The research confirmed a significant positive correlation between the quality of interpersonal relationships and the level of job satisfaction, with a stronger association observed in relationships with supervisors than with colleagues. Gender did not significantly differentiate satisfaction levels or relationship quality assessments; however, Generations Z and Y were found to perceive the fairness of managerial evaluations differently.
Research limitations/implications: The study was conducted on a sample of Poles, which constitutes a significant limitation regarding the generalization of findings to other cultural contexts where work value hierarchies and interpersonal communication models may differ. Future research should adopt a comparative approach to verify the extent to which the identified relationships between gender, generation, satisfaction, and interpersonal relations are universal or conditioned by the local socio-economic context.
Originality/value: This study contributes to the field by demonstrating that supervisor relationships have a more profound impact on job satisfaction than peer relationships, highlighting key priorities in workplace dynamics.
Keywords: interpersonal relationships, job satisfaction, gender, generational affiliation.
Category of the paper: Research paper.

1. Introduction

Professional activity constitutes a fundamental domain of human existence, serving not only as a primary source of economic security but also as a critical platform for self-actualization and the development of self-esteem. However, it also involves physical and psychological burdens; factors such as stress, ambiguous promotion criteria, or job instability (Leszkowski-

Baczyński, 2007) can diminish the quality of professional life and levels of satisfaction (Dhamija et al., 2019). While the literature emphasizes the multidimensionality of job satisfaction, the social nature of human activity means that pivotal significance is attributed to interpersonal relationships.

The quality of bonds with supervisors and colleagues forms the foundation of organizational culture (Jakimiuk, 2015), influencing employee well-being and retention (Kozioł, Wojtowicz, 2016). Given the demographic diversity of the contemporary labor market, the assessment of these relationships may be influenced by gender-related social capital and the distinct value systems of different generations. Understanding how gender and generational affiliation modify the perception of professional experiences is essential for creating an effective work environment. This article presents the results of empirical research aimed at identifying the relationship between the quality of interpersonal relationships and the job satisfaction of Poles within the context of the demographic variables.

2. Job satisfaction – essence and determinants

Job satisfaction represents a pivotal construct in organizational psychology, sharing equal significance with the study of leadership and motivational processes. Initially explored within the field of occupational psychology, it evolved into a focal point of organizational psychology as greater emphasis was placed on the broader context of work. As Bańka (2000) notes, occupational psychology focuses on professional activity, whereas organizational psychology directs its attention toward teamwork and, consequently, the social foundations of organizational functioning.

In the literature, the term 'job satisfaction' is defined in various ways and is often used interchangeably with 'contentment.' Schulz and Schulz (2002) describe satisfaction as a set of positive and negative attitudes toward professional duties, while Vroom (1964) emphasizes the employee's affective orientation toward their position. Central to this concept is the subjectivity resulting from the fulfillment of needs (Pocztowski, 2003) and the evaluation of professional experiences that generate a specific emotional state (Colquitt et al., 2019; George, Jones, 2008). This conceptualization aligns with Gruszczyńska-Malec and Rutkowska (2005), who emphasize that satisfaction stems from information about work within the company, as well as knowledge and evaluation of the organization itself. They link satisfaction to both personal and peer experiences, presenting it as a positive attitude that manifests in specific actions and behaviors.

In the literature, job satisfaction is considered across two dimensions: need deprivation and workplace attitudes. Linking satisfaction to needs, it should be noted that satisfaction arises when an employee's needs are met, which in turn translates into workplace attitudes, such as

loyalty to the employer (Lotko et al., 2025). Satisfied employees tend to demonstrate proactive work behaviors, higher productivity, and increased organizational commitment (Robbins et al., 2024). They are also more productive than their dissatisfied counterparts (Rikeetta, 2008). Notably, research confirms a correlation between person-job fit in terms of competencies and job satisfaction (Springer, 2018). The level of satisfaction depends on various determinants; understanding these allows for the intentional shaping of organizational well-being, enhancing the employer's market attractiveness (Kumar, 2024).

Referring to a key theory in the field, factors of satisfaction - according to Herzberg's two-factor theory - can be divided into motivators (achievement, responsibility, recognition, advancement, growth) and hygiene factors (salary, working conditions, workplace atmosphere, interpersonal relationships, and organizational policy) (Herzberg et al., 1959). This framework has been applied in studies by Lo et al. (2016), Sanjeev and Surya (2016), Matei and Abrudan (2016), Alrawahi et al. (2020), and Lee et al. (2023). In Polish literature, the classification of satisfaction factors has been presented by Sarapata and Doktór, Bielawska, and Siekańska, among others. Sarapata and Doktór (1963) highlighted the importance of ten factors, including trust in management, trust in one's work group, fair and just pay, and opportunities for development. Bielawska (1971) focused on eight factors, emphasizing professional development and the quality of managerial evaluation. In turn, Siekańska (2005) observes that while autonomy is crucial for highly gifted individuals, interpersonal relationships constitute one of the most vital pillars of satisfaction for the broader workforce. This diversity of approaches underscores the complexity of the issue while highlighting the fundamental importance of social bonds.

The issue of job satisfaction remains a subject of intense interest for both researchers (Oktaviani, Sopiah, 2022; Dinda, 2024) and practitioners. Annual studies provide valuable sources of information regarding factors that shape satisfaction as well as those losing significance over time. Scientific findings closely align with national studies in Poland; for instance, recent reports indicate that Poles prioritize the leader's role in building satisfaction through open communication (National Job Satisfaction Survey, 2023). In 2024, the importance of interpersonal relationships was further confirmed by the 8th edition of the 'Happiness at Work of Poles' study. The study reported a significant decline in respondents' subjective happiness, with the mean score dropping from 6.8 in 2023 to 5.8 the following year, with relatively higher satisfaction rates declared by men. In the hierarchy of factors shaping well-being, alongside salary and a sense of meaning in work, a key role was played by a friendly atmosphere (74.5%), the quality of the relationship with the supervisor (70.6%), and the ability to rely on colleagues (67.5%). Importantly in the context of these considerations, relational aspects were more frequently emphasized by women and ranked fourth and fifth overall among the strongest motivators encouraging employees to recommend their workplace (Happiness at Work of Poles, 2024).

Job satisfaction, viewed as an attitude, depends on factors that fluctuate according to demographic characteristics. Research indicates that gender and generational affiliation play key roles. Regarding gender, Schill-Owens et al. (2025) demonstrated that across all studied generations, men declared higher levels of job satisfaction than women. The significance of this division is also indicated by research by da Silva et al. (2022). Regarding generational differences, studies by Young et al. (2013) and Wilson et al. (2008) found that representatives of the Baby Boomer generation are the most satisfied, while individuals from Generations X and Y exhibited lower, though similar, levels of satisfaction. These analyses are complemented by the latest work of Pakuła (2025), which focused on the specific determinants of satisfaction among the youngest group of employees - Generation Z.

Both scientific research and labor market reports confirm that interpersonal relationship quality remains a pivotal determinant of job satisfaction. However, the impact of these relationships must be analyzed through the lens of demographic moderators, specifically gender and generational affiliation.

3. Interpersonal relationships in the workplace: theoretical aspects

The issue of workplace relationships has been addressed by numerous researchers (Jes Bella, 2023), with E. Mayo indisputably regarded as the pioneer of this field. The Hawthorne studies demonstrated that treating employees as subjects and considering both formal and informal relationships fundamentally changes their attitude toward work (Szaban, 2007). Consequently, professional activity inherently necessitates building interpersonal connections, the quality of which is manifested through communication styles and emotional expression. Relationships can be of a personal nature, which fosters a supportive climate, or impersonal, based on formal principles of ethics, courtesy, and refraining from individualized interactions (Adler et al., 2011).

The quality of interpersonal relationships should be linked to social support in the workplace, which, according to Kawula, is defined as a type of "social interaction undertaken by one or two parties in a problem situation, involving the exchange of emotional or instrumental information" (1996, p. 7). As a result, it is related both to how others act toward the employee and what feelings and self-perception the employee presents. As Tardy (1985) emphasizes, support can take four primary forms: emotional (acceptance, care), appraisal (demonstrating the person's value), instrumental (material and financial assistance), and informational (advice). Such support, provided by supervisors, subordinates, or colleagues, mitigates stress and prevents group alienation. It is particularly crucial for new employees, as it accelerates socialization and fosters a sense of belonging, thereby enhancing well-being and engagement. Employees who receive support from supervisors (Wnuk, 2019) and

colleagues experience a sense of belonging and have greater confidence in receiving help during crises, which positively affects well-being and translates into mutual understanding that facilitates contact. This prevents isolation and often leads to friendships, thereby contributing to work engagement and a higher level of job satisfaction.

Key determinants of job satisfaction include effective leadership and management practices, which, as Singh (2025) underscores, exert a significant and positive influence on employee attitudes. According to Putri and Fathiyah (2025), a high standard of leader-member relations, supported by effective interpersonal communication, directly enhances job satisfaction.

In literature, particular attention is paid to specific leadership styles. Sainaro et al. (2025) and Gregoriou et al. (2025) confirm a robust link between transformational leadership and employee satisfaction, with the latter research team highlighting the equally important role of transactional leadership. Furthermore, Jim'ale et al. (2026) emphasize the importance of servant leadership, arguing that management based on trust and emotional support not only increases satisfaction but also strengthens organizational stability and effectiveness. From a process perspective, positive relationships with management are the result of how an employee is treated, fair evaluation, and support in development and crisis situations. Such behaviors establish managerial authority and shape the overall work climate. However, aligning with the perspective of Poljašević et al. (2021), employee well-being depends not only on hierarchical structures but on the entirety of human interactions. Peer relationships, mutual support, and efficient communication create an atmosphere that is intrinsically linked to emotional well-being and ultimate job satisfaction.

3. Research methodology

The objective of the research was to identify the relationship between interpersonal relations and job satisfaction, considering the role of gender and generational affiliation as potential variables differentiating the assessment. The primary research problem was formulated as follows: What is the relationship between workplace interpersonal relationships and job satisfaction, and to what extent do gender and generational affiliation differentiate satisfaction levels and the perceived quality of these relationships? To address this, the following hypotheses were tested: H1: There is a positive relationship between the quality of interpersonal relationships and job satisfaction. H2: Gender and generational affiliation significantly differentiate the level of job satisfaction and the assessment of interpersonal relationship quality in the workplace

The study was conducted using the CAWI (Computer-Assisted Web Interview) technique. The research sample (N = 384) was structured based on gender and generational affiliation. According to the adopted division, respondents aged 18 to 30 were classified as Generation Z,

those aged 31-45 as Generation Y, and individuals aged 46 and older were considered representatives of Generation X. The study targeted professionally active Poles of working age, which, according to the Statistics Poland (GUS) methodology, encompasses men aged 18-64 and women aged 18-59 (Table 1).

Table 1.
Research sample structure (N = 384)

Generation	Men	Women	Total	%
Generation Z	60	52	112	29,17
GenerationY	77	69	146	38,02
Generation X	69	57	126	32,81
Total	206	178	N = 384	100

Source: own research results.

In conclusion, the research sample size ensures the representativeness of the results for the general population at a 95% confidence level (with a margin of error of 5%). The selection of respondents was conducted using purposive-quota sampling, accounting for key demographic variables essential to the research objectives.

4. Research results

Conducting research on the relationship between satisfaction and interpersonal relations at work involved the need both to identify the level of job satisfaction among the respondents and to evaluate individual variables related to interpersonal relationships.

The study results reveal the following satisfaction structure: 64.84% of participants reported being satisfied with their jobs, 26.83% expressed neutral or uncertain views, and 8.33% reported a lack of satisfaction. Regarding interpersonal relationships, both supervisor and peer dynamics were verified. The analysis of supervisor relationships examined both their overall quality and the underlying formative variables. Overall, 72.66% of respondents rated their relationship with their supervisor positively. Specifically, participants indicated that their supervisors treat them with respect (66.14%), provide fair evaluations (62.5%), and recommend valuable training opportunities (42.97%). Regarding peer-to-peer dynamics, 74.22% of respondents rated these relationships positively, while only 5.73% reported a negative assessment of their interactions with colleagues (Table 2).

Table 2.
Interpersonal relations in the workplace – research results (%)

Statements	Strongly agree	Agree	Hard to say	Disagree	Strongly disagree
My supervisor treats me with respect as an employee	28,12	38,02	25,00	4,95	3,91
My supervisor evaluates my performance fairly	25,52	36,98	26,04	7,55	3,91
My supervisor refers me to valuable training sessions	17,71	25,26	26,04	16,15	14,84
My relationship with my supervisor is positive	30,73	41,93	20,83	5,73	0,78
My relationships with my colleagues are positive	35,16	39,06	20,05	4,17	1,56

Source: own research results.

To verify the strength and direction of the relationship between the quality of interpersonal relationships and the level of job satisfaction, a correlation analysis was conducted using Spearman's rho coefficient, the detailed results of which are presented in Table 3. Statistical analyses confirmed significant positive correlations across all analyzed variables ($p < 0.001$). The strongest correlation (rho = 0.73) was observed between the subjective sense of being respected by the supervisor and the perception of their evaluations as fair, suggesting a close link between management ethics and the objectivity of HR processes. Furthermore, it was confirmed (rho = 0.70) that positive relationships with the supervisor are closely linked to the perception of fair evaluation. A high coefficient value (rho = 0.60) was also identified in the relationship between respect from the supervisor and overall job satisfaction. A comparative analysis showed that vertical relationships with the immediate supervisor (rho = 0.56) exhibit a stronger association with job satisfaction than horizontal (peer) relationships occurring between colleagues (rho = 0.47). This hierarchy of relational determinants underscores the pivotal role of management in shaping employee well-being, which aligns with market trends reported in 'Happiness at Work of Poles' and corroborates the findings of Simanjuntak and Ginting (2025).

Table 3.
Relationships between variables (rho)

Statements	No.	1	2	3	4	5
My supervisor treats me with respect as an employee	1					
My supervisor evaluates my performance fairly	2	0,73				
My supervisor refers me to valuable training sessions	3	0,49	0,54			
My relationship with my supervisor is positive	4	0,66	0,71	0,44		
My relationships with my colleagues are positive	5	0,50	0,56	0,39	0,71	
I feel satisfied with my job	6	0,60	0,56	0,47	0,56	0,47

Note: $p < 0,001$.

Source: own research results.

In the subsequent stages of the study, the distribution of respondents' answers was verified within groups distinguished by gender and generational affiliation. The research revealed no significant differences in respondents' opinions regarding job satisfaction or other interpersonal relationship variables based on the criterion of gender ($p > 0.05$). The second variable analyzed was generational affiliation. The analysis identified one statistically

significant relationship in this area; specifically, the Kruskal-Wallis test results ($p = 0.04$, $H = 6.41$) indicate that representatives of Generation Y (mean rank 202.09) more frequently declare fairness in evaluations by supervisors compared to respondents from Generation Z (mean rank 171.16). No statistically significant relationships were found for the remaining variables. This confirms that younger employees tend to perceive their supervisors' evaluations as unfair compared to their older colleagues. This discrepancy may stem from differences in professional experience, varying levels of self-awareness, or potentially divergent value systems regarding workplace authority.

5. Conclusions

Job satisfaction, viewed as a multifaceted construct central to an employee's organizational functioning, encompasses both its determinants and the outcomes of professional fulfillment. In prioritizing the former, this study focused on workplace interpersonal relationships and their association with satisfaction. The research confirmed a positive correlation between these variables, thereby providing empirical support for H1. This finding underscores the critical importance of fostering a supportive organizational culture that encompasses both supervisor and peer-to-peer dynamics. As social beings, individuals inherently require respect and support, both of which are intrinsically linked to the cultivation of trust. Respondents reporting high job satisfaction consistently noted receiving developmental support from their supervisors, alongside being treated with respect and evaluated fairly.

Regarding the verification of H2, no significant differences were found in the responses of Polish employees concerning job satisfaction or interpersonal relationships when analyzed by gender. However, generational affiliation emerged as a cognitively significant factor. The Kruskal-Wallis test revealed that representatives of Generation Y are significantly more likely to perceive supervisor evaluations as fair compared to those from Generation Z. Consequently, H2 was only partially supported.

In conclusion, interpersonal relationships and job satisfaction are critical determinants of an employee's quality of professional life. The finding of a stronger correlation between supervisor relationships and job satisfaction, compared to peer relationships, suggests that workplace dynamics should be analyzed through this specific categorical lens. It remains indisputable, however, that both factors are essential in fostering work conditions conducive to happiness and the overall development of employee well-being.

Despite the representative nature of the sample, this study has certain limitations. First, the data were collected via the CAWI technique, which, while efficient, may exclude individuals with lower digital literacy or limited internet access. Second, the study relies on self-reported measures, which are susceptible to social desirability bias, particularly regarding

the evaluation of hierarchical relationships. Third, although the sample (N = 384) is representative of working Poles, the purposive-quota sampling method may not fully capture the nuances of specific industries or sectors (e.g., public vs. private), which could differentially influence the dynamics of interpersonal relationships and job satisfaction.

Future research should expand upon these findings by incorporating longitudinal designs to observe how the link between interpersonal dynamics and job satisfaction evolves over time, particularly across different career stages. Additionally, qualitative methods, such as in-depth interviews, could provide deeper insights into why Generation Z perceives managerial evaluations as less fair than Generation Y. Finally, investigating mediating variables, such as organizational culture or remote work frequency, would be valuable in further differentiating the impact of vertical and horizontal relationships on employee well-being in the modern labor market.

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BEYOND PROFITS: REVISITING FIRM-LEVEL MULTI-STAKEHOLDER VALUE CREATION THROUGH CSR AND ESG

Karolina ŁUDZIŃSKA

University of Warsaw, Faculty of Management; k.ludzinska@uw.edu.pl, ORCID: 0000-0002-0322-489X

Purpose: Value creation is a dynamic and multifaceted organizational phenomenon that remains conceptually fragmented within the CSR and ESG literature. This study revisits firm-level multi-stakeholder value creation to examine how organizations generate value beyond profits through CSR and ESG.
Design/methodology/approach: Drawing on Stakeholder Theory, the study conducts a systematic literature review of 41 peer-reviewed articles to identify and synthesize value creation pathways and enabling mechanisms associated with CSR- and ESG-driven non-financial value creation for multiple stakeholders.
Findings: The review shows that non-financial value creation through CSR and ESG emerges through complementary pathways, including strategic and governance-based mechanisms, stakeholder co-creation processes, market- and brand-related channels, employee- and innovation-driven dynamics, operational improvements, and eco-efficiency and reputational effects. These pathways are activated by enabling mechanisms such as non-financial reporting, strategic integration of CSR and ESG, ESG performance, and governance arrangements. The synthesis further identifies nonlinear value creation dynamics, suggesting threshold effects, diminishing returns, and U-shaped relationships.
Research limitations/implications: The review is limited to peer-reviewed journal articles and excludes grey literature. Future research should empirically test the proposed pathways and mechanisms, examine their interactions, and explore boundary conditions and nonlinear dynamics.
Practical implications: Organizations should embed CSR and ESG within core strategy and governance structures, integrate them across functions, actively engage stakeholders, and calibrate ESG investments in light of potential nonlinear effects.
Social implications: The study highlights the role of stakeholder engagement, governance mechanisms, and transparent non-financial reporting in organizational value creation beyond profits. The findings may inform organizational initiatives aimed at strengthening responsible conduct and accountability.
Originality/value: The study provides conceptual clarity on how CSR and ESG generate non-financial value for multiple stakeholders at the firm level. It extends Stakeholder Theory by conceptualizing value creation as a dynamic, iterative process and introduces an integrative, conceptual model to guide future research and managerial practice.
Keywords: CSR, ESG, Non-Financial Value, Value Creation, Stakeholders.
Category of the paper: Literature Review.

1. Introduction

Despite the prominence of Corporate Social Responsibility (CSR), and Environmental, Social, and Governance (ESG) frameworks, their effectiveness in creating organizational value remains uncertain (Gillan et al., 2021; Liang, Renneboog, 2021). A substantial body of research has examined the CSR and ESG connection to value creation (VC), however it remains insufficiently theorized and empirically explored (Schneider, Meins, 2012). Early CSR scholarship primarily conceptualized value creation in financial terms, and more recent studies continue to focus on the link between CSR or ESG performance and firm financial outcomes (e.g., Nardi et al., 2020; Seo et al., 2021; Zhang et al., 2020). While these contributions are significant, they largely define value in narrow economic terms (Harrison, Wicks, 2013).

This study adopts the broader conceptualization of value creation proposed by Lepak, Smith, and Taylor (2007), viewing it as a dynamic and multidimensional process that extends beyond purely financial outcomes. This perspective enables analysis across individual, organizational, and societal levels, while recognizing organizations as central agents of value creation through innovation, knowledge development, and effective management. Accordingly, the study focuses on non-financial value creation, emphasizing that value can be generated and perceived beyond profit.

The study is further grounded in Stakeholder Theory, which conceptualizes organizations as embedded in networks of relationships with actors who can affect or are affected by organizational activities (Freeman, 1984). From this perspective, organizational decisions are evaluated not only in terms of shareholder value but also with regard to their social and environmental consequences for a broader set of stakeholders. Stakeholder Theory thus provides both a normative and analytical foundation for examining how organizations pursue value creation beyond purely financial terms for multiple stakeholders.

The integration of Stakeholder Theory into organizational value-creation strategies remains underdeveloped, as the mechanisms through which value is generated are insufficiently specified (Tantalo, Priem, 2016). To address this gap, the study examines whether and how organizations create firm-level non-financial value for multiple stakeholders through CSR and ESG. This objective is guided by the following research questions:

RQ1. How do organizations create firm-level non-financial value through CSR and ESG?

RQ2. What pathways and enabling mechanisms underpin this process?

To address the research questions, the study employs a systematic literature review, examining CSR and ESG research through the lens of multi-stakeholder, organizational value creation. It synthesizes the key pathways and enabling mechanisms through which CSR and ESG generate firm-level, non-financial value, as well as the empirically evidenced outcomes of this process.

By achieving its objectives, this study contributes to the literature in three ways. First, it synthesizes prior research on the relationships between CSR, ESG, and firm-level non-financial value creation for multiple stakeholders. Second, it advances the field by proposing a future research agenda and offering practical recommendations for managers and decision-makers. Finally, it introduces a conceptual model of non-financial value creation through CSR and ESG, thereby extending Stakeholder Theory.

The remainder of the paper is structured as follows. Section 2 describes the systematic literature review methodology. Section 3 presents the findings, focusing on the relationships between CSR, ESG, and organizational value creation for multiple stakeholders. Section 4 discusses the results. The paper concludes with key insights, recommendations, limitations, and directions for future research.

2. Methods

2.1. Research Methods

To address the research objectives, a systematic literature review was conducted (e.g., Breslin, Gatrell, 2023; Kraus et al., 2022; Paul, Criado, 2020; Rousseau, 2024) in line with PRISMA guidelines (Moher et al., 2015; Page et al., 2021). To ensure comprehensive coverage, the database search was complemented by backward and forward snowballing (Wohlin, 2014).

The study further incorporates retrospective and comparative analyses using descriptive techniques and culminates in the development of a conceptual model synthesizing non-financial value creation through CSR and ESG for multiple stakeholders at the firm level. This methodological approach enables a systematic and nuanced examination of the relationships among CSR, ESG, and multi-stakeholder value creation.

2.2. Sample Selection

The sample selection process, summarized in Figure 1, followed a structured PRISMA-based procedure. A systematic search was conducted in Web of Science and Scopus (November 2023-January 2026) using combinations of the keywords “CSR”, “ESG”, “value creation”, and “stakeholder”. The search was limited to peer-reviewed journal articles published in English between 2000 and 2026 and restricted to Q1 and Q2 journals according to the 2024 SCImago Journal Rank, with two exceptions for highly relevant Q3 papers.

After removing duplicates and applying predefined inclusion and exclusion criteria, 33 articles remained for full-text analysis. To enhance coverage, backward and forward snowballing via Google Scholar identified eight additional highly cited and substantively

relevant studies. The final sample comprised 41 publications, which formed the basis for the subsequent analysis and conceptual model development.

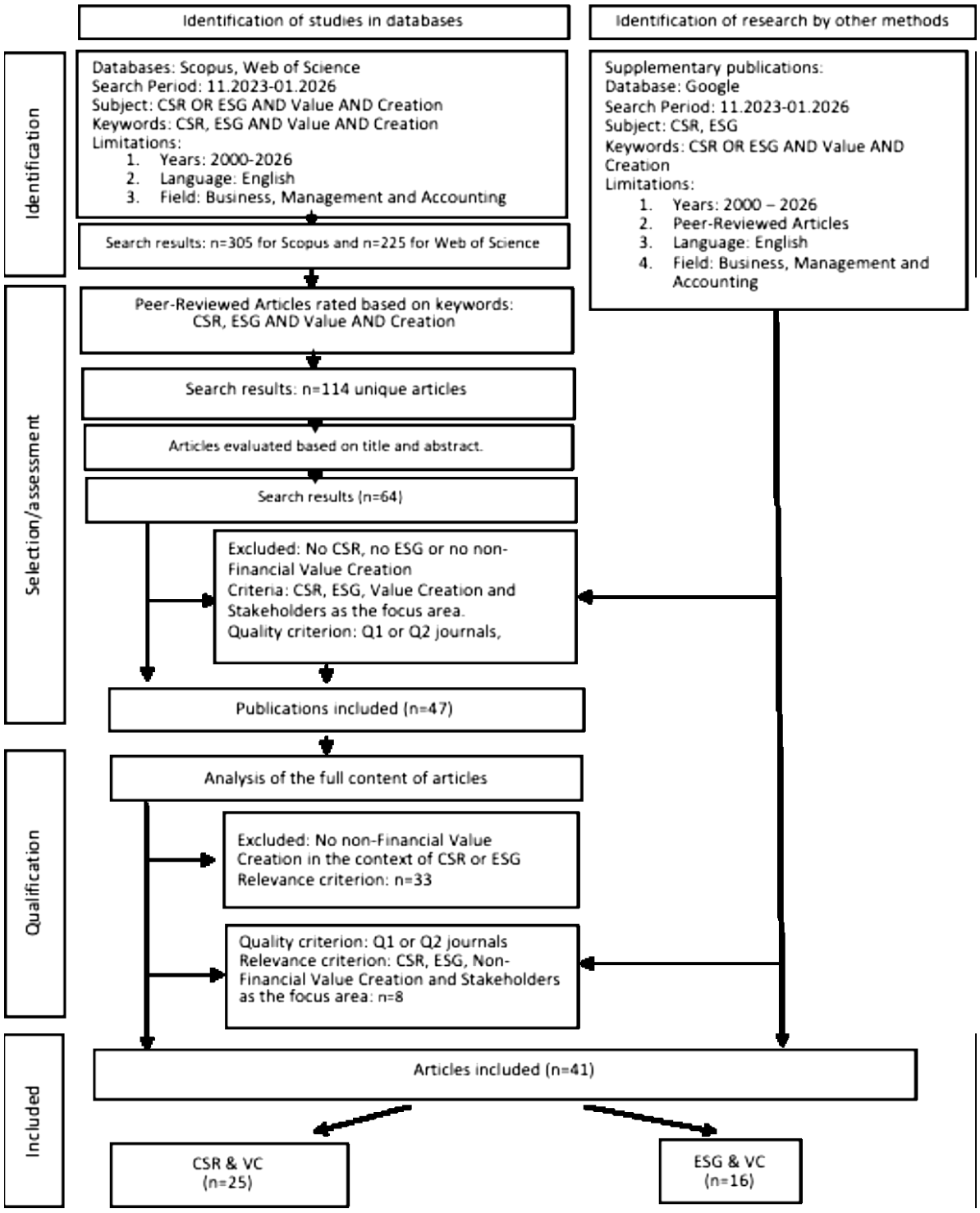


Figure 1. Publication selection scheme based on PRISMA methodology.

Source: Author's own elaboration.

3. Results

The results provide a comprehensive examination of how non-financial value creation for multiple stakeholders at the firm level is conceptualized and operationalized in the CSR and ESG literature. Table 1 synthesizes the identified value creation pathways, their enabling mechanisms, and the corresponding evidence and outcomes.

Table 1.
CSR- and ESG-Driven Non-Financial Value Creation

	CSR or ESG	Value Creation Pathway	Enabling Mechanism	Value Creation Evidence and Outcomes	Authors
Value Creation Dynamics	ESG	Strategic and Governance-Based Value Creation	Non-Financial Reporting	Value creation through enhanced board oversight and ESG awareness enabled by integrated reporting	Adams, 2017
	CSR			CSR reporting–driven value creation by improving crisis resilience	Mattera et al., 2022
			CSR Engagement, Integration, and Implementation	CSR-enabled shared value creation across the value creation chain	Juscius, Jonikas, 2013
				Value creation through CSR via reputation and competitive advantage driving firm performance	Saeidi et al., 2015
		Win–Win Value Creation between Organizations and Stakeholders		Value creation through enhanced stakeholder capabilities (human, social, entrepreneurial, and sustainability-oriented)	Garriga, 2014
				Value creation through relational stakeholder management enabling joint value creation beyond transactional mechanisms	Bridoux. Stoelhorst, 2016
				Stakeholder value creation through ethical management of ecological stakeholder relationships in international markets	Khojastehpour, Shams, 2020
				Stakeholder value creation through CSR strategy, driven mainly by social and environmental dimensions	Samet et al., 2022
				Long-term stakeholder value creation enabled by strategic alignment of value creation and value preservation	Lyons, 2022
				Context-specific value creation models aligning CSR obligations with industry-specific societal goals	Donaldson, 2023
				Value creation through employee pride, enhancing job satisfaction and affective commitment	Zhou et al., 2018
				CSR value creation through stakeholder co-creation enabled by social-media-based dialog	Jurietti et al., 2017
				Value creation through diversified CSR actions driven by stakeholder scrutiny and risk	Brower, Mahajan, 2013

Cont. table 1.

		Maximizing utility for CSR or ESG-oriented shareholders		Value creation through CSR by expanding investor choice and enabling utility gains without shareholder cost when anticipated	Baron, 2007
				Value creation through catering to heterogeneous investor preferences beyond pure financial payoffs	Fama, French, 2007
				Value creation through CSR by aligning firm activities with heterogeneous investor preferences	Friedman, Heinle, 2015
				Value creation through maximizing shareholder welfare aligned with prosocial investor preferences	Hart, Zingales, 2017
	ESG		ESG Integration and Implementation	Value creation through ESG via implicit stakeholder claims linking non-investors to shareholder value	Cornell, Shapiro, 2021
	CSR	Market-Based Value Creation through Customers, Brands, and Trust	CSR Engagement, Integration, and Implementation	Customer value co-creation behavior	Mubushar et al., 2025
				CSR leadership and culture enable value-chain capabilities driving customer and financial value	Phillips et al., 2019
				Customer value creation through strategic, stakeholder-driven CSR enhancing loyalty	Konalingam et al., 2023
				Customer satisfaction as a key driver for CSR-based firm value creation	Ghanbarpour et al., 2024
				Customer trust, satisfaction, co-creation and loyalty in hotel sector	Van Huy et al. (2025)
			CSR Strategy	CSR–marketing strategic alignment drives firm performance and value creation	Wetzel et al., 2025
	ESG		ESG Integration and Implementation	Enhancing brand value in the product market	Zou et al., 2025
			ESG Performance	Higher customer willingness to pay, stronger brand value, and increased intangible firm value	Das, Dey, 2025
				Strengthening market image, fostering stakeholder trust	Aguiar, Moxoto, 2025
	CSR	Employee-Based Value Creation through Incentives, Motivation, and Satisfaction	Employee-oriented CSR	Employee motivation to lead (MTL) within an organization beyond traditional financial incentives	Davis et al., 2025
	ESG		ESG Integration and Implementation	Employee job satisfaction	Alvarez-Perez, Fuentes-Bracamontes, 2025
			Governance Mechanisms and Performance	Value creation enabled by sustainability-linked executive compensation and governance	Almici, 2022
		Operational and Organizational Performance–Based Value Creation		Value creation through enhancing performance and stakeholder wellbeing	Hristov et al., 2022
			ESG Integration and Implementation	Firm performance beyon financial terms	Jacob, Ritika, 2025
				Positive impact on firms' production efficiency, firms' inefficiency distributions	Arsenopoulou et al., 2025
			AI-enabled digital platform business models	Delivery and capture of ESG-related value	Nevi et al., 2025
		Innovation-Driven Value Creation	ESG Integration and Implementation	Sustainable value creation in mining industry based on people and their innovation	Mohammadian et al., 2026
				Value creation via ESG policies embedded in product and R&D-based innovation strategies	Doni, Fiameni, 2023
	CSR		CSR Engagement, Integration, and Implementation	Firm-level innovation outcomes	Na, Lee, 2026
				CSR investments and impact on innovation in products or services that contribute to shared value creation	D'Souza et al., 2024
			CSR Governance Mechanisms	Positive impact on environmental innovation	Mensah et al., 2025

Cont. table 1.

Nonlinear (U-Shaped) Value	ESG	Eco-efficiency–based Value Realization	ESG Integration and Implementation	Value creation via ESG policies and disclosure through eco-efficiency gains up to a threshold, with diminishing returns thereafter	Broadstock et al., 2019
		Reputational and Brand-Based Value Creation	ESG Performance	U-shaped value creation through ESG performance via corporate reputation	Aguiar, Moxotó, 2025
				ESG-related brand value enhancement exhibits a U-shaped relationship	Wang et al., 2024

Source: Author's own elaboration based on the literature.

4. Discussion

4.1. CSR and ESG as Pathways to Non-Financial Value Creation

The findings indicate that CSR and ESG contribute to firm-level non-financial value creation through multiple, interrelated pathways operating across strategic, organizational, market, and stakeholder domains. A prominent stream highlights strategic and governance-based mechanisms, emphasizing the integration of sustainability into corporate strategy and governance structures to enhance transparency, risk management, and long-term legitimacy (Adams, 2017; Juscius, Jonikas, 2013; Mattera et al., 2022; Saeidi et al., 2015).

Complementing this view, the win-win stakeholder perspective conceptualizes value as co-created through reciprocal and trust-based relationships, positioning CSR and ESG as mechanisms that align firm objectives with stakeholder interests (Bridoux, Stoelhorst, 2016; Brower, Mahajan, 2013; Donaldson, 2023; Garriga, 2014).

Other pathways reflect more actor-specific mechanisms. Shareholder-oriented research frames CSR and ESG as instruments enabling investors to align corporate conduct with social preferences (Baron, 2007; Fama, French, 2007; Hart, Zingales, 2017; Cornell, Shapiro, 2021). Market-based mechanisms emphasize enhanced brand equity, relational and reputational capital (Ghanbarpour et al., 2024; Konalingam et al., 2023; Phillips et al., 2019; Wang et al., 2024), while internal pathways highlight employee motivation, productivity, and operational efficiency (Almici, 2022; Davis et al., 2025; Hristov et al., 2022).

Emerging research further points to innovation-driven, eco-efficiency, and reputational mechanisms, suggesting that CSR and ESG function as catalysts for sustainable innovation, and resource optimization (Broadstock et al., 2019; Mohammadian et al., 2026). Overall, non-financial value creation through CSR and ESG depends on the strategic integration of sustainability practices across organizational and stakeholder spheres.

4.2. Enabling Mechanisms and Outcomes of Value Creation

The review demonstrates that enabling mechanisms are critical in translating CSR and ESG into tangible non-financial value across stakeholder groups. A central mechanism is non-financial reporting, which enhances transparency, governance quality, and organizational resilience (Adams, 2017; Mattera et al., 2022). Integrated reporting further supports shared value creation by strengthening reputation, competitive positioning, and value chain coordination (Juscius, Jonikas, 2013; Saeidi et al., 2015). At the stakeholder level, value creation is enabled through capability development and relational management practices that shift engagement from transactional exchange to co-creation (Bridoux, Stoelhorst, 2016; Garriga, 2014; Khojastehpour, Shams, 2020).

A second group of mechanisms operates through the strategic integration of CSR and ESG into core organizational processes. Alignment with long-term stakeholder and societal goals fosters durable value, particularly when adapted to industry-specific contexts (Donaldson, 2023; Lyons, 2022). Internally, employee-oriented CSR enhances motivation, commitment, and organizational identification (Alvarez-Perez, Fuentes-Bracamontes, 2025; Davis et al., 2025; Zhou et al., 2018). Externally, customer trust, loyalty, and co-creation drive relational and market-based value (Ghanbarpour et al., 2024; Konalingam et al., 2023; Phillips et al., 2019).

Finally, governance and innovation-oriented mechanisms, including sustainability-linked incentives, ESG performance systems, eco-efficiency, and digitalization, facilitate value realization across organizational, reputational, and societal domains (Aguiar, Moxotó, 2025; Almici, 2022; Broadstock et al., 2019; Wang et al., 2024). Overall, CSR- and ESG-driven value creation depends not on isolated initiatives but on the coherent configuration and integration of multiple enabling mechanisms.

4.3. Nonlinear Value Creation Dynamics through ESG

An emerging strand of research highlights nonlinear (U-shaped) dynamics in the relationship between ESG engagement and non-financial value creation. Rather than being monotonic, ESG investments appear subject to thresholds and diminishing or increasing returns. In eco-efficiency-based pathways, initial ESG integration generates value through cost reductions and improved resource utilization, but beyond a certain intensity marginal returns decline, revealing limits to efficiency-driven gains (Broadstock et al., 2019).

Similarly, reputational and brand-based value creation follows a U-shaped pattern. Low to moderate ESG performance may generate limited benefits or even net costs, whereas sustained and credible commitment enhances reputation and brand value (Aguiar, Moxotó, 2025; Wang et al., 2024).

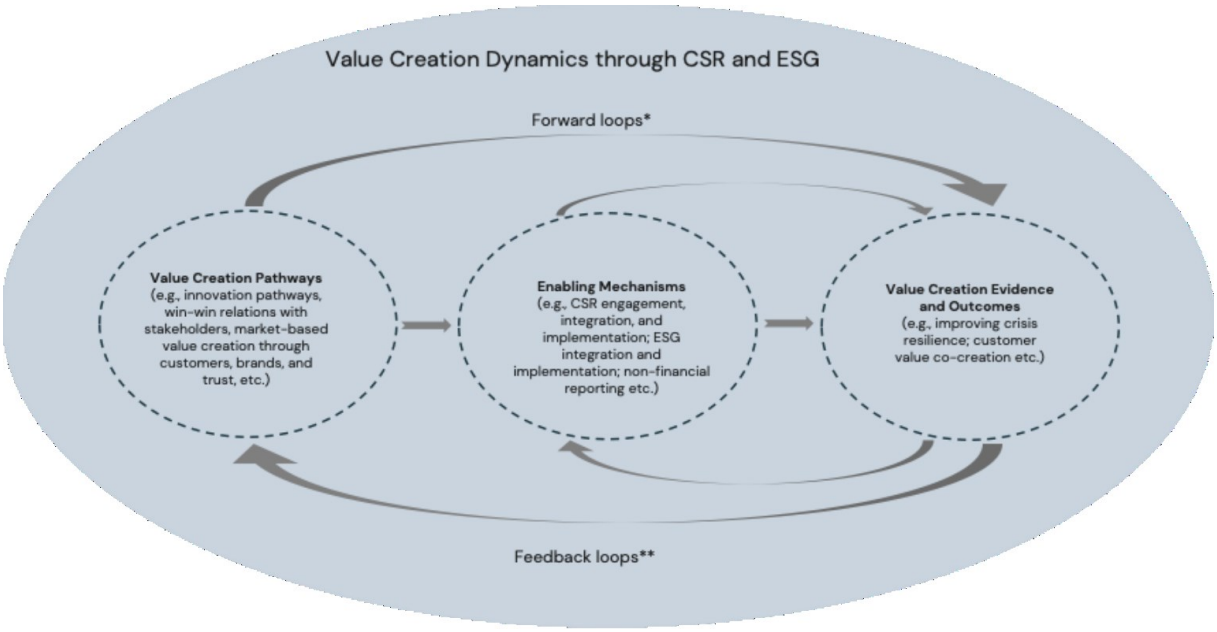
The literature also identifies AI-enabled digital platforms as an emerging mechanism that amplifies ESG-related value creation. By embedding data analytics, automation, and real-time monitoring into core processes, such platforms enhance transparency, stakeholder interaction, and scalable value co-creation (Nevi et al., 2025). In this sense, AI operates not merely as an efficiency tool but as a strategic enabler of novel ESG governance and value propositions.

4.4. A Firm-Level Dynamic Process Model of Value Creation through CSR and ESG for Multiple Stakeholders

Building on the identified pathways, enabling mechanisms, and empirically evidenced outcomes, this subsection integrates the findings into a firm-level dynamic conceptual model of multi-stakeholder value creation through CSR and ESG (Figure 2). The model conceptualizes value generation as an evolving, multi-stage process shaped by stakeholder interactions, organizational processes, and institutional conditions.

The framework extends Stakeholder Theory by viewing CSR- and ESG-driven value creation not as a static outcome of alignment, but as a dynamic and iterative process. CSR and ESG integration activates relational and strategic pathways that, under specific enabling mechanisms, translate into observable manifestations such as stakeholder trust, cooperation, innovation, or resistance. Over time, these manifestations consolidate into measurable outcomes for firms and stakeholders.

Crucially, the model incorporates feedback loops: realized outcomes reshape stakeholder expectations, power relations, and engagement strategies, thereby influencing subsequent CSR and ESG integration. By explicitly accounting for these recursive dynamics, the framework advances a process-oriented perspective that captures how CSR and ESG continuously reconfigure stakeholder relationships and value creation over time.



Notes:
* Forward Loops from Value Creation Pathways and Enabling Mechanisms → via Organizational Processes → to Value Creation Outcomes
** Feedback Loops from Value Creation Outcomes → via Stakeholder Responses → to Value Creation Pathways and Enabling Mechanism

Figure 2. A Firm-Level Dynamic Process Model of Value Creation through CSR and ESG for Multiple Stakeholders.

Source: Author's own elaboration.

5. Conclusions, Limitations, Recommendations, and Directions for Future Research

This study provides new insights into how CSR and ESG generate firm-level non-financial value for multiple stakeholders by systematically integrating fragmented findings across the literature. By developing a dynamic, process-oriented conceptual model, it shows that value creation unfolds through interconnected pathways and enabling mechanisms that produce observable organizational and stakeholder outcomes. In doing so, the study extends Stakeholder Theory by conceptualizing CSR and ESG integration as iterative processes that continuously reshape stakeholder interactions and firm-level value dynamics.

The findings identify complementary pathways, including strategic and governance-based mechanisms, win-win stakeholder value creation, market- and brand-based channels, employee- and innovation-driven processes, operational improvements, and eco-efficiency and reputational effects. These pathways are activated through enabling mechanisms such as non-financial reporting, strategic CSR and ESG integration, ESG performance systems, and governance arrangements.

Despite these contributions, several limitations should be acknowledged. First, the systematic review relied on manual search procedures, which may have led to the omission of relevant studies. Second, the proposed conceptual model has not yet been empirically tested, limiting conclusions regarding its practical applicability. Future research should therefore validate and refine the model through empirical investigation.

Several avenues for further research emerge. Future studies should examine potential nonlinear relationships between ESG engagement and non-financial value creation, particularly U-shaped or threshold effects associated with varying ESG intensity and configuration. Longitudinal and process-oriented designs are also needed to capture how value unfolds over time and how stakeholder heterogeneity and power asymmetries shape ESG-related outcomes. Further work should also explore how institutional contexts, including regulatory regimes and mandatory reporting frameworks, condition CSR and ESG effectiveness.

In addition, future research should operationalize intermediate manifestations of value creation, such as stakeholder trust, engagement, cooperation, or resistance, to clarify the mediating mechanisms linking CSR and ESG to long-term outcomes and to better understand trade-offs and opportunity costs across stakeholder groups. The growing deployment of artificial intelligence offers further opportunities to enhance measurement precision and to support the empirical testing of process-oriented value creation models.

For practice, the findings suggest that CSR and ESG should not be treated as isolated initiatives but as integrated strategic processes embedded in governance and decision-making structures. Managers should incorporate these activities into core strategy, coordinate them across organizational functions, and actively engage stakeholders in their implementation.

In addition, monitoring relational indicators such as trust and engagement can provide early signals of value creation. Decision-makers should also carefully calibrate ESG investments, taking into account the possibility of diminishing or nonlinear returns.

In conclusion, value creation through CSR and ESG is neither automatic nor linear but emerges from recursive interactions between organizations and stakeholders within specific institutional contexts. By emphasizing dynamics, feedback effects, and enabling mechanisms, this study advances a process-oriented perspective on sustainability-driven value creation and encourages a shift from static, compliance-based approaches toward more adaptive and relational strategies.

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PSYCHOLOGICAL GAMES IN ORGANIZATIONS – THE USE OF TRANSACTIONAL ANALYSIS IN MANAGEMENT

Anna MAJZEL[1*], Magdalena BYCZKOWSKA[2]

[1] Akademia im. Jakuba z Paradyża w Gorzowie Wielkopolskim; amajzel@ajp.edu.pl,
ORCID: 0000-0003-0248-1293
[2] Akademia im. Jakuba z Paradyża w Gorzowie Wielkopolskim; mbyczkowska@ajp.edu.pl,
ORCID: 0000-0003-2718-2863
* Correspondence author

Purpose: The aim of this article is to present the basic principles of Transactional Analysis, a psychological concept that also finds application in business, and to demonstrate the possibilities for its practical use within an organisation through the analysis of psychological games. The article also seeks to demonstrate ways to interrupt these games in order to prevent the systemic perpetuation of inefficiency and to support understanding and communication.
Design/methodology/approach: This study utilised various methods, including descriptive methods and mini case studies. Their selection was determined by the available research materials related to Transactional Analysis. The descriptive method was used to present the key issues of this study, in particular to discuss TA. Furthermore, the article utilises a literature review, conducted using both Polish-language and foreign-language sources.
Findings: TA can provide a useful theoretical and practical framework for studying organisational dynamics, and the analysis of psychological games can be an effective tool for intervention in management processes, team development and conflict resolution.
Research limitations/implications: The research results presented here form part of a broader study concerning a specific entity. However, the comprehensive application of TA principles in such studies may contribute to a better understanding of how people function both as individuals and as members of teams.
Practical implications: The findings of this research have both theoretical and practical implications. From a theoretical perspective, they may serve as a contribution to raising awareness of and demonstrating the usefulness of AT in the business world; in practice, they may inspire a different way of looking at human behaviour within organisations, as well as the crises and conflicts associated with it.
Social implications: Examining human behaviour through the prism of ego states may contribute to a better understanding of one's own actions and decisions, both individually and within groups, and consequently may lead to a correction of unfavourable and destructive behaviours.
Originality/value: The article provides cognitive value through an empirical demonstration of the application of TA's theoretical principles in the organizational settings, in the context of individuals and teams, which may contribute to a greater understanding of dysfunctional employee behaviour.
Keywords: psychological games, transactional analysis, organization.
Category of the paper: research paper, case study.

1. Introduction

Contemporary organizations operate in a dynamic and complex environment, the volatility of which significantly affects the effectiveness and stability of these organisations' operations, as well as their competitiveness. In this context, one of the key management issues in enterprises is the role played by interpersonal relationships and communication processes. Despite growing awareness of the importance of effective cooperation, in business practice one very often observes recurring patterns of behaviour that hinder the achievement of goals at both the individual and team levels; they lead to conflicts, a lack of understanding of employees' roles in work processes, or simply have a destructive impact on the functioning of the organisation or parts thereof. One of the tools enabling the identification and analysis of these recurring patterns of behaviour is the concept of psychological games, derived from Transactional Analysis. The aim of this article is to discuss the basic principles of TA as a psychological concept that is also applicable in the organizational context, as well as to demonstrate the possibilities for its practical application in organisations through the analysis of psychological games. Furthermore, an attempt will be made to identify ways of breaking these games, so as to prevent the perpetuation of systemic inefficiency and to support the development of understanding and effective communication.

2. Transactional Analysis – origins, application, basic concepts

One of the most important aspects of an organisation's functioning is that related to people. People constitute one of the organisation's most significant resources (Orzech, 2024; Rogozińska-Pawełczyk, Sitarska-Piwko, 2024), influencing the level of competitiveness and thus the organisation's development potential; hence, both economic theory and practice provide many concepts for describing the state and potential of human resources. One of these is the concept of Transactional Analysis (TA), which is relatively little known in the Polish context. According to the International Society for Transactional Analysis, Transactional Analysis is a theory of personality and a system of psychotherapy focused on development and personal change' (Stewart, Joines, 2021, p. 3). Crucially, this concept finds wide application beyond psychotherapy: in education, counselling, but also in organisations – in this field, it is used for all kinds of training, diagnosis and description of the functioning of various entities, particularly where "there is a need to understand individuals, improve interpersonal relationships or communication" (Stewart, Joines, 2021, p. 4).

The creator of the TA concept is Eric Berne, who worked particularly intensively between 1949 and 1958, conceptualising the principles and subsequently promoting them to a wide audience. Following his death, research in the field of TA continued (Hay, 2012; Widdowson, 2010; Mountain, Davidson, 2011; Berne, 2021), which has contributed not only to the widespread recognition of this method globally but also to enhancing its practical utility.

The fundamental task of TA is to examine ego states described as "coherent systems of thoughts and feelings that manifest themselves through corresponding sets of behaviours" (Stewart, Joines, 2021, p. 17). Applying the general framework of TA to the organisational context (Hay, 2010), it can be assumed that "the organisational specialisation is intended for practitioners who work within or on behalf of organisations, taking into account the organisational framework, context and development. Their work aims at the development, growth and improvement of people's effectiveness" (Stewart, Joines, 2021, p. 383). Even this brief overview, setting out the general principles of TA, demonstrates its universality and, at the same time, its broad applicability.

However, for the purposes of this study, which focuses primarily on specific and repetitive behaviours of people in organisations (described in TA as psychological games), the basic principles of TA will be presented in such a way that this section of theoretical considerations forms the basis for describing the games observed within the company.

Transactional analysis is distinguished from other psychological concepts by the ideas that constitute its components:

- the model of ego states,
- transactions, strokes, time structuring,
- life script,
- misrecognitions, redefinitions, symbiosis,
- substitute feelings, vouchers and games.

These elements interconnect and influence one another. However, to fully understand the nature of games, their components and rules, it is necessary to familiarise oneself with the models of ego states and transactions.

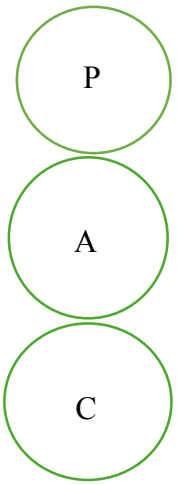
Ego-state models – Essentially, we distinguish between two models: functional and structural, and their specific characteristics are shown in Table 1. E. Berne defined ego states as "a coherent pattern of feelings and experiences directly linked to a corresponding pattern of behaviour" (Stewart, Joines, 2021, p. 17).

Table 1.
Ego states

Structural state	Functional state
Defines the content of ego states	Shows how to use ego states
Components	Manifestations

Source: own work.

The first-order structural model presents three ego states, which are described using behaviours, thoughts and feelings (appropriate to the ego state), as shown in Figure 1.



Parent ego state
behaviours, thoughts and feelings copied from parents or people fulfilling this role.

Adult ego state
behaviours, thoughts and feelings that are direct responses to situations in the here and now.

Child ego state
behaviours, thoughts and feelings carried over from childhood.

Figure 1. First-order structural model[1] – model of ego states.

Source: Stewart, Joines, 2021, p. 14.

Access to all three ego states is necessary for healthy personality development, learning, exploration, and forming relationships. We need access to all three ego states (Hargaden, Sills, 2002, p.180). The Adult ego state, through analysis, logical thinking, reference to facts and deduction, can solve problems, devise strategies and respond appropriately to situations. Rules and values, on the other hand, are elements of the Parent ego state – it is through this that we adapt to society. We gather our opinions and norms; these are also stereotypes that we may have adopted from people who were important to us in childhood. Too much energy in this state leads to a tendency to create an excessive number of prohibitions and commands. Thanks to the Child ego state, we can explore the world, experience emotions and feel; it is also a place of creativity, exploration, expression, openness, spontaneity and intuition, but also of fears and anxieties.

To understand human behaviour, it is essential to explore the functional model[2] – here we learn how the 'I' states are used (James, Jongewald, 1994). Only by linking actual human behaviours with their source do we gain a holistic picture of the individual.

Understanding ego states is key to analysing human behaviour, which, from the perspective of organisational functioning, can yield benefits in the form of understanding the causes of specific behaviours, including, for example, recurring destructive ones, which we can find in the next AT concept – transactions. Their specific nature will only be briefly touched upon in this article, so as to provide a basis for discussion on games.

[1] This paper presents very general principles; in professional practice using TA, advanced approaches are employed, including a second-order structural model – only such a perspective on the individual allows for a comprehensive description.

[2] Given the nature of this paper, we refer those interested in expanding their knowledge of 'I-states' to the literature.

We encounter transactions in the process of communication; communication begins with a transactional stimulus, whilst the reaction to it is a response. Hence the definition of a transaction: a transactional stimulus plus a transactional response. (Stewart, Joines, 2021, p. 81). We distinguish the following types of transactions:

- complementary,
- crossed,
- hidden.

Complementary transactions – the essence of this transaction is that, graphically speaking, the vectors (arrows indicating the direction of communication) are always parallel (hence another name for it – parallel transaction). Complementary transactions can continue as long as the questioner receives the responses from the 'I' state that they expected, e.g. Adult-Adult, Adult-Child, Child-Child.

Example: Parent-Child

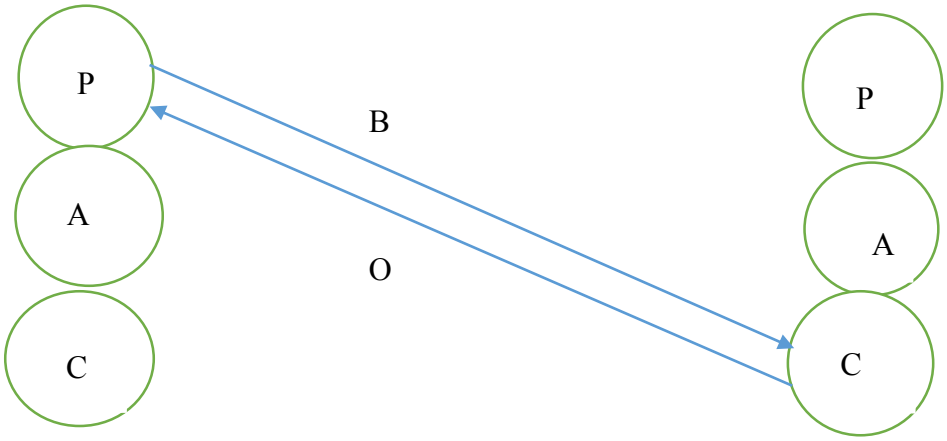


Figure 2. Parent-Child complementary transaction.

Source: own work.

Crossed *transactions* – a transaction in which the transaction vectors are not parallel, i.e. one in which the 'I' state to which the person is addressing is not the same as the one from which the person is responding. (Stewart, Joines, 2021).

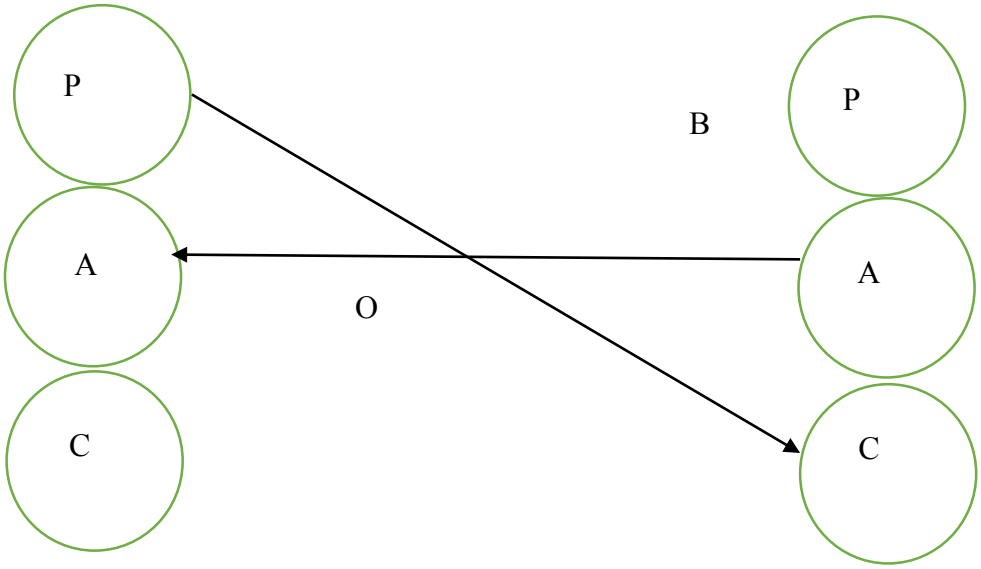


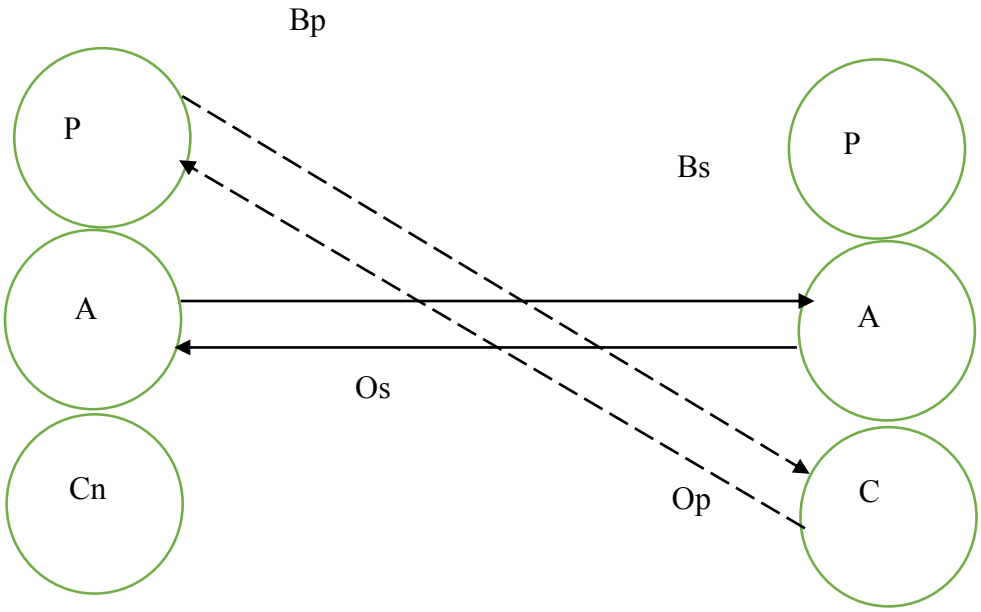
Figure 3. Adult-Adult and Parent-Child Cross-Transaction.

Source: own work.

A consequence of this situation may be that the person initiating the dialogue changes their state to one expected of them by the other party.

Hidden *transactions* – the essence of this transaction is the transmission of two pieces of information at the same time:

- overt information (at the social level) – most often at the Adult-Adult level,
- hidden information (at the psychological level) – usually at the Parent-Child level or Adult-Adult.



Key: Bs, Os – stimulus and response at the social level; Bp, Op – stimulus and response at the psychological level.

Figure 4. Hidden double transaction.

Source: own work.

E. Berne emphasised that the essence of communication is always hidden information; therefore, if we wish to understand someone, we must refer to the psychological level of communication.

3. Psychological games- theoretical background

The same applies to psychological games, which constitute a significant and common element of an individual's functioning within groups and various interpersonal relationships. This concept was developed by E. Berne over many years, a process reflected in the evolution of its definition. Ultimately, it took the following form: 'We call a game a series of complementary hidden transactions leading to a well-defined, predictable outcome. To put it more descriptively, it is a periodic, often recurring set of transactions, seemingly flawless, with a hidden motive, or, more colloquially, a series of moves with a trap or a 'trick'" (Berne, 2022, p. 37; Erskine, 2016, p. 187).

In practical terms, psychological games can be recognised, among other things, by the characteristic consequences of the interaction — the concluded conversation leaves the participants with a sense of discomfort, inconsistency, or reflection on the repetitiveness of a particular pattern ("why did it end this way again"). Despite such experiences, individuals engage in psychological games relatively frequently.

This phenomenon can be explained by referring to the benefits that these games provide to participants (Bowers, 2025; Cornell et al., 2026). Although they may take various forms and occur at many levels of functioning, their common feature is the reinforcement of an individual's specific beliefs. Consequently, mind games serve to maintain cohesion, even if this comes at the expense of communicative effectiveness or the quality of interpersonal relationships.

The classic game follows this formula:

$$F + H = R \rightarrow P \rightarrow K \rightarrow Z$$

where:

F – stratagem,

H – hook,

R – reaction,

P – switch,

K – confusion,

Z – payoff.

Stratagem – conveyed non-verbally, e.g. 'I'm helpless, but if you're willing to help me, I'll sort it out for you' – i.e. a hidden psychological message; an invitation to play along, which will only work if the other person has some weakness (a hook).

Hook – the other person's vulnerability that causes them to react to the bait. A weakness is linked to needs, patterns or beliefs (e.g. the belief that people in need must be helped, or the need for recognition).

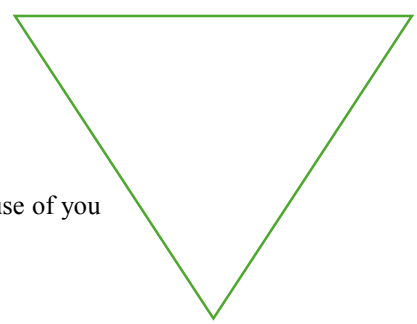
Reaction – a response to the situation and the start of role-playing.

Switch – a significant moment in the game; may be linked to a lack of ideas or solutions; a sudden change in roles or the significance of the situation occurs.

Confusion – disorientation on the part of one or both parties, a sense of not understanding the situation.

Payoff – a reward, e.g. confirmation of one's own beliefs (no one is able to help me, no one respects me), justification of behaviour or avoidance of responsibility.

Each of us enters into these games with greater or lesser ease, but from different positions. S. Karpman (2016, West 2020) proposed analysing psychological games through the prism of the roles embedded in the drama triangle.



Persecutor

Gotcha now, you b****...
Schlemiel
If you weren't here
Look what I've done because of you
I know, but I won't tell
My better

Rescuer

If I were you
At your service
Tell me quickly what happened
Have another drink, it'll help
Lucky you know me, what would have done without me

Victim

Wooden leg
Kick me
A madman's carving
But I think I'm boring you
Yes, but...
What will I do if you leave me
I can't do it, but you can

Figure 5. Karpman's dramatic triangle and games.
Source: own work.

The Persecutor is someone who always takes their own side, stands by their own views, fails to see the good in others and does not acknowledge their perspective; they tend to view people as bad and deserving of punishment.

The Rescuer is a person who takes responsibility for others; in their view, people are helpless and need to be helped. The Rescuer perceives other people as inferior, weaker, and incapable of acting.

The Victim is a person who fails to recognise their own strengths; they see themselves as inferior, helpless and wronged, and deny themselves the right to act. As a result, they attract the Rescuer or the Persecutor.

Each of us tends to enter these games from a specific position, but rarely remains in that role. As the game progresses, roles change; however, the best way to exit the game is to return to the Adult Self state[3] . In the diagram above, alongside the positions in the games, the names of games characteristic of a given role are also presented – this is a limited catalogue; furthermore, it is worth noting that E. Bern (2022) described a substantial collection of games, leaving room for the observation of human behaviour and its description through the prism of new games. It should also be emphasised that a game can be a conversation, a series of similar utterances, whilst it may be spread out over time and consist of several interactions.

4. Psychological games- an analysis of psychological games from business practice

The analysis of psychological games below is based on observations made at a medium-sized company in the Lubuskie Province, which provides comprehensive advertising services to businesses. This company has been operating on the market for over 20 years; the business was founded by three partners, initially offering only printing services. The company's growth was achieved by adding new services and entering new markets, which also resulted in an increase in staff numbers, currently standing at 35. In mid-2025, the company's owners faced a significant problem related to interpersonal difficulties within the team. After analysing the situation, specific actions were proposed to the owners, which involved, amongst other things, the need to observe the team. This observation yielded many insights used in the recovery plan; however, for the purposes of this article, those relevant to the subject of the study are presented.

The psychological games observed were initiated by both employees and management. After analysing the frequency of the situations, their intensity, and also their effects, the authors of the study decided to present three games: 'Yes, but…', 'If it weren't for you', and 'I'm just trying to help'.

Yes, but…

This is a game that occurs very frequently in critical situations that threaten the completion of a project. Example:

Patryk: We still haven't completed that advertisement.

Manager: OK, you can use the forklift tomorrow from 1.00 pm.

Patryk: I understand, boss, but we've got a delivery from Y at 2.00 pm tomorrow.

[3] C. Steiner (1971, pp. 146-158) proposed the use of a 'first-aid kit'—that is, a set of questions revealing the true reasons for entering the game—as a method for exiting the game.

Manager: Well, why don't you split the tasks among the team?
Patryk: Yes, but the lads won't be happy, because they've already got other things planned.

This situation causes frustration to build up, at an already difficult time. Although the exchange begins as a D-D conversation, Patryk shifts into the role of the victim. Often, such an exchange continues for a while, after which the employee is left with the conviction that they cannot count on their boss, whilst the manager is left frustrated that the employees are not taking responsibility and are not trying to solve problems themselves, shifting the burden onto the already overworked manager. It is worth noting that Patryk, who initially took on the role of victim, then, having received no help, remains convinced that the manager will not help as usual, and shifts into the role of persecutor. The manager, on the other hand, initially in the role of rescuer (no one asks him for help), shifts into the role of victim, left, as always, with an unresolved problem.

One way to interrupt the game is to ask Patryk what solutions he sees himself, or to encourage him to evaluate the options – that is, to take on the responsibility and agency characteristic of an Adult. Perpetuating this dynamic reinforces the belief that nothing can be done, which in turn entrenches a sense of helplessness and lack of agency.

The second game, the scale of which was astonishing, is *'If it weren't for you…'*

It is hardly an exaggeration to say that most employees, including members of the management team, engage in this game. It is a game that highlights the pervasive tendency to shirk responsibility, as if it were practically the norm within this organisation. The way it plays out and the areas it affects vary, but its scale and impact become apparent after just a few or a dozen rounds, for example:

- If you hadn't been on holiday then, we would have managed.
- If he hadn't been late, this pile would be smaller.
- If you hadn't been so controlling, I would have done it ages ago.
- If you'd got the hang of this project sooner, I could already be leading another team.
- If you'd worked as a team, you'd have got a bonus.

And although these statements convey information in themselves, when analysed in this specific context, they reveal that people attribute responsibility for their own limitations, inaction or lack of agency to others. It is worth noting that, on a psychological level, they derive a number of benefits from this, such as the ability to maintain the status quo or justify a reluctance to change. The person to whom such words are directed can, through their reactions, end the game; desirable reactions might include questions such as:

- What specifically would you like to do despite these limitations?
- What do you have real influence over?
- What decision are you making in this situation?

It is also important to encourage the separation of facts from interpretations and feelings, as well as to introduce the principle of accountability for actions within one's own sphere of influence.

In the game *'At Your Service*', one of the co-owners took a specialised role. Acting as a rescuer, he helped whenever and however he could:

- I swapped the kettle and the coffee machine around so it would be better for you (did anyone ask him to, and who is it supposed to be better for?).
- I rang X for you.

There are countless such situations, but one of them triggered a real crisis – until then, during our rather informal Christmas Eve gatherings, there had been a clear rule: 'We don't give each other presents'. The boss broke the rule, explaining that 'It's no big deal, I just wanted to make you happy'. In all the situations described, the manager satisfies his need to feel needed, emphasises a sense of superiority ("I know better that presents are needed to celebrate"), controls others and tries to bolster his position.

5. Summary

The analyses presented in this paper demonstrate that Transactional Analysis offers a valuable conceptual and practical framework for interpreting organizational dynamics, particularly in the areas of communication and interpersonal relations. The relevance of this tool has been demonstrated in the examples observed in the company under study. Furthermore, the theoretical foundations of TA discussed and characterised, together with the examples, demonstrate its potential for application in a business environment, particularly in the area of recognising repetitive and unconscious, yet often destructive, patterns of behaviour identified in psychological games. These games, as shown, can significantly reduce the effectiveness of organisational activities and the quality of cooperation between employees. Therefore, identifying these games and the roles adopted by employees within them can be a significant step towards limiting the mechanisms that lead to the perpetuation of inefficiency at the individual and team levels.

Furthermore, with regard to the aim of this article, it should be emphasised that the examples and interpretations presented confirm the possibility of the practical application of Transactional Analysis in organisations – merely noticing the games and identifying their potential effects is not enough; it is necessary to interrupt the games. Only this conscious intervention in communication can contribute to building more transparent and responsible relationships and increasing the effectiveness of cooperation. Thus, the intended objective has been achieved, demonstrating both the theoretical foundations of the concept and its practical utility.

Furthermore, to highlight the practical application of the TA concept, several TA-based training courses (to choose from) were proposed to the company's owners. These were designed to facilitate employees' self-awareness, the observation of their own and others' behaviour, and to demonstrate the impact of communication styles on team building and organisational culture. However, the number of problems and their multidimensional nature within the organisation in question indicate that the process of restoring balance will be a long one. The use of AT-based workshops, where a clear conceptual framework seems ideal for describing team dynamics and the mechanisms that sustain conflict, may help to cease or limit ineffective patterns of behaviour, and this in turn may contribute to further exploration of the usefulness of AT in organisations.

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THE LEADER AS A CRITICAL STRATEGIST AND EMPATH: COMPETENCY PROFILE IN HUMAN-AI HYBRID TEAMS FROM THE PERSPECTIVE OF MANAGEMENT PRACTITIONERS

Katarzyna MIKOŁAJCZYK[1*], Anna BIŁYK[2], Rafał ŁABĘDZKI[3]

[1] SGH Warsaw School of Economics, Institute of Human Capital; katarzyna.mikolajczyk@sgh.waw.pl, ORCID: 0000-0003-0630-4382
[2] SGH Warsaw School of Economics, Institute of Human Capital; anna.bilyk@sgh.waw.pl, ORCID: 0000-0002-4815-9366
[3] SGH Warsaw School of Economics, Institute of Human Capital; rlabed@sgh.waw.pl, ORCID: 0000-0002-0239-4125
* Correspondence author

Purpose: The article aims to identify and rank key leadership competencies for managing human-AI hybrid teams. It addresses an empirical gap concerning the demands on leaders where AI functions as an integral team member rather than just a tool.
Design/Methodology/Approach: The study utilized a survey-based method with a purposively selected sample of practitioners (N = 79) experienced in leading human-AI teams. A custom questionnaire enabled a quantitative assessment of 24 competencies and a qualitative analysis of managerial challenges and barriers.
Findings: The analysis reveals that practitioners prioritize cognitive and relational competencies over technical ones. Top-rated competencies include critical thinking/data evaluation and emotional intelligence, while AI tool proficiency ranked significantly lower (7th place). The findings suggest the leader's role is evolving toward a critical empath model, combining algorithmic verification with the management of team well-being.
Limitations/Research implications: Generalizability is limited by the exploratory nature of the study, purposive sampling, and the modest sample size. Future research should employ representative samples and conduct cross-sector comparisons.
Practical implications: The results offer guidance for HR in recruitment and development, shifting focus from tool-based training to metacompetencies like digital ethics and psychological resilience. Businesses should cultivate leaders capable of managing technology-related anxiety and building trust.
Originality/Value: The article empirically validates theoretical models within the Polish organizational context. It offers a unique practitioner perspective that challenges technocratic leadership approaches and demonstrates the primacy of soft skills in human-AI collaboration.
Keywords: leadership competencies, artificial intelligence, hybrid teams, human-AI collaboration, critical thinking, emotional intelligence.
Category of the paper: Research paper.

1. Introduction

Artificial intelligence (AI) is driving fundamental changes in organizational leadership models, changes that extend well beyond the scope of traditional managerial competencies. In an era defined by algorithmic decision support, leaders are no longer merely organizational administrators; they are increasingly responsible for shaping the ethical frameworks of AI implementation and managing its organizational consequences. This requires competencies in building trust within human-AI relationships, navigating ethical dilemmas, and accounting for the impact of technology on diverse stakeholder groups (Westover, 2025).

The rapid evolution of technology, particularly the widespread adoption of generative artificial intelligence (GenAI), is compelling a fundamental shift in how AI's role in the workplace is understood. We are witnessing a transition from the model of "AI as a tool" to the concept of "AI as a team member" (*team-centered AI* or *AI as a teammate*). As Seeber et al. (2020) and Schafheitle, Weibel, and Rickert (2021) observe, in this configuration, managers face what might be called "two-leader situations" – circumstances in which managerial authority coexists with algorithmic recommendations that often lack transparency in their decision-making processes. The literature emphasizes that effectiveness in such an environment requires a specific combination of competencies. On the one hand, digital fluency and AI literacy are essential; on the other, as Bock and von der Oelsnitz (2025) and Dedhia (2025) argue, distinctly human competencies become critical: empathy, visionary thinking, and ethical reasoning, none of which technology can replicate. Jarrahi (2018) describes this phenomenon as a symbiosis in which AI assumes analytical tasks while humans retain the advantage in contextual reasoning, strategic planning, and relationship management.

Despite the growing body of theoretical publications, a significant research gap persists regarding empirical verification of these assumptions. Existing competency frameworks tend to be normative in character, grounded in theoretical postulates or literature reviews (Budianto et al., 2025), and rarely incorporate the direct perspective of those managing automation processes within organizations. The scholarly discourse lacks the practitioner's voice: an answer to the question of how leaders themselves, those confronting the daily challenges of human-AI collaboration, define their own needs and the competencies they consider essential.

This article aims to fill that gap by giving voice to practitioners. The study focuses on the subjective assessments of managers actively leading hybrid teams (human-AI collaboration), enabling them to identify and rank the skills required for effective performance independently. It also allows for a response to the central research problem: what competencies do practitioners consider critical for the effective management of such teams? The analysis addresses four specific research questions: (1) which competencies are most important and which are relatively less so; (2) whether differences in perceived priorities exist between leaders with varying levels of AI experience; (3) what practical rationale underlies the selection of these competencies;

and (4) how the identified challenges and barriers translate into developmental needs for leaders. This approach allows theoretical models to be tested against organizational reality. It also helps determine whether practitioners themselves perceive technical proficiency or cognitive and relational competencies as the key to success. The findings carry significant implications both for leadership theory and for the practice of HR departments designing managerial competency development pathways in the AI era.

2. Literature Review

2.1. From e-Leadership to AI-Leadership: A Paradigm Shift

Technology has long shaped leadership models, evolving from the concept of e-Leadership, defined by Avolio and Gardner (2005) as a process of social influence mediated by advanced technologies, toward the more complex construct now referred to as AI-Leadership. Where e-Leadership focused on managing distributed teams through digital media (Van Wart et al., 2019), AI-Leadership introduces a fundamental change: technology is no longer merely a communication medium but becomes an active participant in the decision-making process (Bock, von der Oelsnitz, 2025). This necessitates a redefinition of the manager's role, from direct decision-maker to arbiter and interpreter of AI-generated outputs. As Myszak and Filina-Dawidowicz (2025) emphasize, this requires a departure from traditional hierarchical models toward adaptive and transformational leadership, in which the capacity to build trust, not only with team members but also with technological systems, becomes central (Zhang et al., 2025).

2.2. Human-AI Complementarity as the Foundation of Hybrid Collaboration

The theoretical basis for analyzing competencies in hybrid teams is the concept of human-AI complementarity – *The Missing Middle* – formulated by Daugherty and Wilson (2018). These authors argue that the greatest potential for productivity gains lies not in replacing humans with AI, but in the space of their close collaboration: humans complement AI by training it and explaining its behavior, while AI systems augment human analytical capabilities.

In this context, Trojańczyk (2024) and Budianto, Rahadian, and Yunita (2025) argue that leaders must possess competencies enabling them to manage the human-AI interaction space. The requirement here is not programming ability, but *AI literacy*, an understanding of systems' capabilities and limitations, enabling leaders to avoid cognitive errors arising from excessive algorithmic trust (*automation bias*) or unwarranted scepticism (*algorithm aversion*). Peifer and Terstegen (2023) define these demands as the necessity of combining technical knowledge with a deep understanding of business processes and ethical dimensions. Zhang et al. (2025) find

that only leaders who perceive the strategic value of AI are capable of effectively activating employees' trust in technology and stimulating innovation.

2.3. Competency Models: Technological or Humanistic Orientation?

A review of recent research reveals a clear dichotomy in approaches to leader competencies in the digital environment. On one side, researchers such as Philip, Gilli, and Knappstein (2023) using Delphi methodology identify key competencies associated with digital transformation: data analytics, organizational agility, and innovation management. On the other hand, a growing consensus is emerging around the primacy of human-centric skills.

In their structured literature review, Bock and von der Oelsnitz (2025) identified 24 leader competencies for the AI era, grouped into cognitive, functional, social, and personal categories. Their analysis shows that as routine tasks become automated, skills that AI cannot replicate gain in importance: critical thinking, creativity, and emotional intelligence. This is corroborated by Dedhia (2025), whose findings indicate that transformational leadership in the AI era must be grounded in strategic vision and empathy to counter employees' fears of job displacement.

Paradoxically, the greater the technological presence in an organization, the more important purely human competencies become. The works cited suggest that in human-AI hybrid teams, it is interpersonal skills that determine the success of AI adoption.

In Polish academic literature, the topic is present but less frequently examined in the specific context of direct human-AI collaboration. Research by Jagoda-Sobalak and Kaliciak-Gebauer (2025) focuses on the competencies of digital leaders, confirming the complexity of requirements, spanning both technological knowledge and social skills. Nevertheless, empirical studies specifically addressing leaders managing hybrid teams within Polish organizational contexts remain scarce. The existing research gap concerns the question of whether Polish practitioners actually prioritize interpersonal and ethical competencies over technological ones in line with global trends, in their day-to-day work with algorithmic systems.

3. Research Methodology

3.1. Research Strategy

To achieve the research objective, an exploratory-descriptive strategy was employed, drawing on mixed-methods methodology to provide a comprehensive account of the phenomenon under study. The use of methodological triangulation, combining quantitative data (competency rankings) with qualitative data (descriptive justifications and identification of barriers), is particularly warranted in research on emerging technologies, where numerical indicators alone may fail to capture the depth of contextual factors (Creswell, 2013). The main

study was conducted in 2025 using the CAWI (*Computer-Assisted Web Interview*) technique, which ensured respondent anonymity and enabled access to a precisely defined target group.

3.2. Sample Characteristics

The sample was selected purposively. Inclusion criteria required respondents to hold a managerial position (middle or senior level) and to have direct experience managing teams that use artificial intelligence tools, including generative AI, process automation systems, and predictive analytics.

The final sample consisted of N = 79 managers with experience leading hybrid teams, drawn primarily from the IT sector (48%), services (16%), and finance (10%), as well as marketing (8%), industry (8%), trade and distribution (6%), and healthcare (4%). The sample was predominantly male (75%), with the majority of respondents aged 25-44 (64%). By professional profile, the sample consisted of team leaders (41%) and middle managers (32%), with 2-5 years of experience with AI (49%), working in both small firms (32%) and large corporations (22%). Respondents demonstrated high digital maturity: 67% reported deep AI integration into their workflows, and 63% described their personal AI proficiency as high, with GenAI tools dominating (81%). Respondents were divided into novice leaders (AI experience <1 year — 27%) and experienced leaders (>1 year — 73%), enabling an examination of how their competency needs evolve over time.

3.3. Research Instrument and Procedure

A custom-designed questionnaire was used as the research instrument. Its central component was a competency list developed from a review of the literature (Albannai, Raziq, 2025; Aziz et al., 2025; Grenda, 2026; Myszak, Filina-Dawidowicz, 2025; Philip et al., 2023; Tasnim, 2024; World Economic Forum, 2025), with particular reliance on the taxonomy presented by Bock and von der Oelsnitz (2025). They identified a catalogue of 24 key leadership competencies relevant to the AI era, which were adapted for the purposes of the present study.

The research procedure consisted of three stages. In the first step, respondents were asked to select 5 key competencies (from 24 available) that, in their view, are essential for the effective management of a hybrid (human-AI) team. In the second stage, participants ranked their chosen competencies by assigning weights according to their perceived importance. In the third, qualitative stage, respondents were asked to provide a written justification for their top three choices and to identify the main challenges and barriers they face in managing hybrid teams effectively. This multi-stage instrument design enabled not only the construction of a precise importance ranking but also a deeper understanding of the motivations and context underlying managerial decisions.

4. Research Findings

4.1. Ranking of Leadership Competencies in Hybrid Teams

Analysis of the collected data enabled the construction of an empirical competency profile for a leader managing a human-AI hybrid team. The results reveal a clear hierarchy of needs, dominated by competencies related to the critical evaluation of technology and interpersonal skills. The five most sought-after competencies identified by practitioners are: (1) *Critical thinking and data evaluation* (mean - 0.48 / sum - 38), (2) *Emotional intelligence* (mean - 0.43 / sum - 34), (3) *Empathic communication* (mean - 0.33 / sum - 26), (4) *Change management and adaptability* (mean - 0.27 / sum - 21), and (5) *Building psychological safety* (mean - 0.25 / sum - 20). Table 1 presents a full overview of the competencies and their practitioner-rated scores. The analysis below groups the 24 competencies under study into four key areas (clusters), enabling a deeper interpretation of the competency profile preferred by practitioners.

Table 1.
Detailed competency ranking by category

Category I. Relational Competencies (dominant area at the top of the ranking) - focused on interpersonal relationships, emotions, and communication			
Rank	**competency**	**no. of indications**	**% respondents**
2	Emotional intelligence	34	43.0%
3	Empathic communication	26	32.9%
5	Building psychological safety	20	25.3%
12	Transparent communication	14	17.7%
14	Ensuring effective information flow	12	15.2%
23	Building and sustaining relationships	6	7.6%
24	Managing diversity and inclusion	2	2.5%
TOTAL	**Total number of indications in the category**	**114**	
Category II. Cognitive and Strategic Competencies (key for setting direction and verifying AI output) - related to information processing, decision-making, and ethics			
Rank	**competency**	**no. of indications**	**% respondents**
1	Critical thinking and data evaluation	38	48.1%
8	Strategic thinking and visionary leadership	18	22.8%
10	Ethical and responsible use of AI	16	20.3%
19	Complex problem-solving	8	10.1%
20	Data-driven decision-making	8	10.1%
21	Creativity and fostering innovation	8	10.1%

Cont. table 1.

22	Customer focus	6	7.6%
TOTAL	**Total number of indications in the category**	**102**	
Category III. Adaptive and Developmental Competencies (essential in dynamic environments) - related to change management, learning, and flexibility			
Rank	**competency**	**no. of indications**	**% Respondents**
4	Change management and adaptability	21	26.6%
6	Talent development and coaching	20	25.3%
11	Building a culture of experimentation	14	17.7%
15	Agile Leadership	12	15.2%
18	Performance management	10	12.7%
TOTAL	**Total number of indications in the category**	**77**	
Category IV. Technological and Digital Competencies (technical foundation, but less frequently cited as most critical) - related to operating, understanding, and implementing AI technologies			
Rank	**competency**	**no. of indications**	**% respondents**
7	AI Literacy	19	24.1%
9	Effective task delegation (between humans and AI)	18	22.8%
13	Cybersecurity awareness	13	16.5%
16	Hybrid process management	12	15.2%
17	Driving team improvement through technology	11	13.9%
TOTAL	**Total number of indications in the category**	**73**	

Source: Authors' own research data (multiple-choice; percentages do not sum to 100%).

Leaders prioritize competencies from the relational and cognitive-strategic domains. Strictly technical competencies (e.g., *AI Literacy*) ranked considerably lower (7th place, 24%), suggesting that the leader's role is evolving toward that of a moderator and strategist – a critical strategist and empath – rather than a technical expert.

4.2. Leader Experience and Competency Perceptions: A Comparative Analysis

A comparative analysis by AI experience tenure revealed a strong consensus on the fundamentals: regardless of experience level, critical thinking and emotional intelligence consistently top the ranking (Table 2). This confirms the universality of a leader profile that combines analytical rigor with empathy.

Differences reflect the stage of technology adoption. Novice leaders focus on the operational management of change and communication transparency (both at 33%), aiming to reduce uncertainty within their teams. Experienced leaders, by contrast, prioritize talent development (29%) and *AI Literacy* (28%), indicating a shift in role from facilitating change to strategically optimizing the potential of human-AI collaboration.

Table 2.
Comparison of Top 5 competencies by AI experience group

Group	Competency (Top 5)	Indications	% Group
Experienced (>1 year) (N=58)	1. Critical thinking and data analysis	28	48.3%
	2. Emotional intelligence	25	43.1%
	3. Empathic communication	19	32.8%
	4. Talent development and coaching	17	29.3%
	5. AI Literacy	16	27.6%
Novice (<1 year) (N=21)	1. Critical thinking and data analysis	10	47.6%
	2. Emotional intelligence	9	42.9%
	3. Change management and adaptability	7	33.3%
	4. Empathic communication	7	33.3%
	5. Transparent communication	7	33.3%

Source: Authors' own research data.

4.3. Rationale for Competency Choices, Barriers, and Developmental Gaps

The quantitative analysis is complemented by an interpretation of the qualitative data gathered in the course of the study. A thematic analysis of responses to open-ended questions identified the practical rationale behind competency selections, key barriers in managing hybrid teams, and resulting developmental needs of leaders. In justifying their prioritization of critical thinking and data evaluation, respondents stressed the need for rigorous scrutiny of AI-generated suggestions – outputs that, though produced rapidly, are not always data-grounded, optimal, or contextually appropriate. Soft competencies, in turn, are perceived as the foundation of leadership, particularly as technology becomes increasingly pervasive. Respondents emphasized that these competencies help not only to "effectively leverage and complement the hard competencies that AI reinforces" (ID 76), but also to "maintain a balance between efficiency and a human approach to work" (ID 44). From the managers' perspective, soft competencies combined with critical thinking enhance effectiveness in change management and adaptability. In the short term, they enable flexible responses to current challenges; over time, they help "lead teams effectively through processes of technological change" (ID 9), changes that generate concern among many employees.

Respondents also identified numerous challenges across three domains: individual, organizational, and technological. These point to a need to develop competencies that enable leaders to guide teams through new forms of AI-integrated work. First, at the interpersonal level, strengthening communication and change management skills is essential, encompassing the ability to address employees' concerns about job loss or transformation, overcome resistance to new tools, and educate teams in the responsible use of AI. Second, at the organizational level, the ability to thoughtfully design task allocation, select appropriate

AI tools, and establish clear principles for human-AI collaboration is critical. Third, at the technological level, leaders need to deepen their understanding of AI systems' capabilities and limitations and develop competencies in systems evaluation and data governance.

5. Discussion

The research findings support a multidimensional interpretation of the evolution of leadership in the context of AI implementation. They confirm the theoretical construct of human-AI complementarity (*The Missing Middle*) formulated by Daugherty and Wilson (2018), while shifting the emphasis significantly, away from technical complementarity and toward the cognitive-emotional dimension. Although hybrid collaboration rests on a technological infrastructure, its effectiveness is determined by the quality of human-AI interaction in terms of interpretation and process management.

Analysis of the competency hierarchy leads to three key conclusions that define the profile of the contemporary leader of hybrid teams. First, despite the intensive use of AI, strictly technical competencies (Category IV) are treated as foundational rather than differentiating factors for leadership effectiveness. An effective leader is not perceived as an AI technical expert, but as a facilitator of collaboration and a strategist capable of harnessing the analytical capabilities of algorithmic systems in pursuit of business objectives.

Second, AI implementation intensifies the need to manage emotional responses within teams. The dominance of critical thinking in the ranking corresponds to the challenges posed by the limited transparency of algorithmic processes (*the black box phenomenon*) described by Schafheitle et al. (2021). Leaders in the study clearly indicate that their role extends beyond operating systems to encompass the verification and contextualization of AI-generated results. A discernible pattern emerges here: as the sophistication of the AI tools being implemented increases, so does the importance attributed by leaders to emotional intelligence (ranked second). This is confirmed by Dedhia's (2025) argument that AI anxiety must be actively managed through empathy and the cultivation of psychological safety within teams. The leader's role is evolving toward a model that combines the verification of algorithmic outputs with the management of team members' psychological well-being.

Third, the comparative analysis reveals a process of competency priority development as leaders gain experience working with AI systems. Priorities shift from the operational management of the change process (adaptation phase) toward the strategic development of employee competencies and coaching (optimization phase). This suggests that the initial resistance and uncertainty surrounding technology gradually give way to the need for systematic development of the team's competencies within the new hybrid work environment.

At the theoretical level, the study supports the model of human-centered leadership described, among others, by Morris and Morris (2024). In the context of automated decision-making processes, the leader serves as an interpreter of meaning and a guardian of organizational values, a function of fundamental importance for the design of future managerial development models.

6. Conclusions

The study found that practitioners perceive an effective leader of hybrid teams as someone who combines strong analytical capabilities with high emotional intelligence. Cognitive and relational competencies form the core of modern leadership, outranking technological proficiency in perceived importance.

The findings carry significant practical implications for human resource management and business strategy. In the area of managerial recruitment and selection, there is a need to reorient selection criteria away from technical proficiency toward metacognitive abilities, including the capacity to synthesize information from diverse sources and critically evaluate algorithmic outputs, as well as emotional maturity. In the domain of competency development, investment should shift from tool-based training (such as prompt engineering) toward programs cultivating digital ethics, change process management, and the building of psychological safety within teams. At the organizational culture level, it is important to support an environment conducive to continuous learning – one in which relational competencies are developed as a collective organizational resource, not merely as an individual managerial attribute.

6.1. Limitations and Directions for Future Research

The primary limitation of the study lies in its purposive sampling design and relatively modest sample size, giving the work an exploratory character. The overrepresentation of the technology sector in the sample may account for the relatively high level of comfort with AI systems reported by respondents.

Future research directions should focus on three key areas. First, longitudinal analyses are warranted to track how the competency hierarchy shifts as autonomous AI agents become more prevalent. Second, incorporating the employee perspective would be valuable, specifically comparing leaders' self-assessments with subordinates' expectations regarding relational competencies in an automated work environment. Third, examining sector-specific variation appears important, particularly investigating whether the identified leadership profiles hold in sectors with lower technological density, such as traditional manufacturing.

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MANAGERS' ACTIVITY IN SOCIAL MEDIA IN THE CONTEXT OF BUILDING RELATIONSHIPS WITH EMPLOYEES – RESEARCH RESULTS

Marta MISZCZAK

Wojskowa Akademia Techniczna; marta.miszczak@wat.edu.pl, ORCID: 0000-0001-7194-3493

Purpose: The objective of this article is to diagnose which social media functions managers use to build relationships with their team members, employees of the organization where they work, and employees of other organizations.
Design/methodology/approach: Secondary sources (publications, scientific articles, reports, and websites) as well as primary sources (own research) were used to prepare the article. Survey research was conducted in 2023 as part of a project on leadership behavior in crisis situations among 198 managers from all over Poland, representing various industries and companies of different sizes.
Findings: The literature review indicates a research gap related to the small number of publications and studies on the use of social media by managers in professional relationships. Available research reports further highlight the low activity of Polish managers on social media compared to the activity of Western managers. The results of the study presented in this article also indicate a small percentage of managers who actively use social media. Their activity is mainly directed towards the employees of the organization where they are employed, and to a lesser extent towards the employees of their own team and employees of other organizations.
Practical implications: The survey results indicate a need for corrective action. Once the underlying causes of managers' low social media activity have been identified, educational initiatives - such as training sessions or workshops - should be implemented, and mentoring or benchmarking should also be considered.
Research limitations/implications: Based on the presented research, it is difficult to give reasons for the lack of activity on social media by a significant proportion of respondents. However, this is a contribution to conducting more in-depth research, especially since there are not many publications in this area. The survey questionnaire did not include a question about the age of the respondents. Perhaps this variable could help to explain the situation. The younger Generation Z has grown up with social media, while older generations are skeptical about this form of communication.
Originality/value: The article has cognitive value. It provides a basis for educational activities aimed at management staff. In addition, the results of the study can serve as a reference point for further research aimed at identifying how Polish managers use social media in professional relationships.
Keywords: social media, manager, professional relations.
Category of the paper: research paper.

1. Introduction

In the context of the rapid development of modern technology, in addition to building interpersonal relationships face to face, relationships formed in cyberspace have become popular. Social media play an important role here. Literature and research reports, indicate that more willingly and frequently this method of communication is used by employees than managers. Paweł Korzyński (2018) points to a research gap related to the small number of publications and studies on the use of social media by managers in professional relationships. It should be emphasized that expectations from employees, but also from customers, regarding the presence of managers in social media are high (Edelman Trust Barometer, 2020). Thus, for example, customers indicate that the activity of an organization's managers in social media increases its credibility and strengthens its brand image (Mazur, 2020; Giz, 2025). The benefits of a manager's presence in social media can be listed much more (Jędrych, 2015, pp. 121-127), hence it seems reasonable to conduct research in the indicated area.

With the above situation in mind, it was decided to conduct a survey among 198 managers from all over Poland, representing various industries and company sizes. A proprietary survey questionnaire was used for this purpose, which included a question about how managers use social media in the context of building relationships with employees. The survey refrained from identifying the types of social media used by a manager in professional interactions, as it was considered that information on this subject can be obtained from secondary materials, including studies or reports posted on the Internet, as well as publications on the subject. By design, it can be assumed that the majority of respondents use the social media statistically most often indicated as popular among Internet users. In this case, it is LinkedIn and X (former Twitter) (Social CEO 2023 Report; Korzyński, 2018). It is worth noting that a particular social media platform will be more readily used depending on the country in which the statistics are conducted (Korzyński, 2018). Facebook in professional relationships is not as popular as one might expect. Some emphasize that the essence of social media, is not the technical side on which social media is obviously supported, but from the point of view of communication, the functions and processes implemented by social media are more important (Wojciechowska, 2023).

Thus, the purpose of the research undertaken is to diagnose what functions of social media a manager uses in building relationships with employees of his team, employees from the organization where the manager is employed and with employees of another organization. For the preparation of the article, secondary sources were used (compact publications, scientific articles, reports and websites) as well as primary sources (own research).

2. The relational nature of social media - a review of the literature

Social media have become part of our lives, fundamentally changing communication and collaboration. They are of widespread interest, both from users and researchers. The main problem, at least from the scientific side, is the definitional arrangements of social media. Difficulties are posed by the dynamics accompanying the development of new communication channels and "the frequent interchangeable use not only in popular discourse, but also in the literature, of several terms closely related to social media" (Wojciechowska, 2023, p. 53). It is also the English-language terminology accompanying social media that is not always translated properly (Wojciechowska, 2023, p. 68).

A review of the definitions of social media in domestic and foreign literature, allows us to note two trends in their formulation (Kapoor et al., 2018; Aichne et al., 2019; Wojciechowska, 2023, pp. 67-73; Wawrowski, 2024, pp. 15-21). Some authors, emphasize the technical aspect, including internet connections and technical devices that make social media possible (e.g. Kaplan, Haenlein, 2010). Others emphasize the social dimension of social media platforms, which allows for two-way communication, relationship building, cooperation and sharing. As an exemplary definition from the second area, one can quote P. Korzyński "Online social platforms (a.k.a. social media, digital age tools, social technologies) can be defined as enabling the construction of social networks and communication in these networks based on virtual (digital) reality (2018, p. 15)".

The relational dimension of social media is also emphasized in their classifications. Dominik Kaznowski lists social media focused on building and maintaining relationships as the category of social media most widely adopted, and cites social networking sites and virtual worlds as examples. Of course, in the classification of D. Kaznowski, there are also other categories that, even if indirectly, serve to build relationships. These are: social media focused on communication and discussion (forums, instant messaging, chat rooms); social media focused on current information and relating to news (microblogs, alert services (citizen notifications) livestream or livecast); social media for the publication (presentation) of opinions and views (e.g. blogs, wikis or citizen journalism sites) (Kaznowski, 2010). D. Kaznowski considers one of the most important functions of social media to be building and maintaining relationships.

Also prominent in P. Korzyński's classification is the social media function of initiating and sustaining relationships. Among the typically relational social media platforms, P. Korzyński includes Facebook, Google+ and VK. Others such as LinkedIn, XING, Viadeo, You Tube Instagram, Twitter, Weibo, corporate Wikis constitute another type of social platforms (microblogging social platforms, graphic and video social platforms, professional social platforms, open content platforms) (2010, p. 67). He uses the following categories to characterize the aforementioned social platforms: self-presentation, information-seeking and

interaction. In interactions, he emphasizes as a form of activity participating in discussions, sending and accepting invitations, liking, linking to a person in the content of tweets (@mentions), sending messages via an additional application, watching user profiles, subscribing to watch a particular user's channel.

There are many more classifications of social media in the literature (e.g. Safko and Brake 2009; Kaplan, Haenlein, 2010; Miotk, 2017, pp. 28-42). This is due to the difficulty of adopting unambiguous and disjointed criteria as a basis for classification (Kaznowski, 2010; Woźniak, 2017, p. 319; Korzyński, 2018, p. 67). The reasons for this can be traced to the dynamic development of social media and the emergence of more and more new social media platforms, and the consequent obsolescence of existing classifications. In addition, the multifunctionality of social media platforms makes it difficult to place a given platform in only one category.

The emergence of social media in the online space in the 1990s (Popiołek, 2015, p. 61) has led to its growing popularity. The social media platforms Facebook and YouTube have long been the most popular. Their reach in 2024 was 83.7% and 82.3% of Internet users in Poland, respectively (Social Media in Poland 2025 Report; DataReportal "Digital 2025: Poland"). From a manager's perspective, LinkedIn and X social media platforms appear to be important as a platform for professional communication. According to data from DataReportal's "Digital 2025: Poland" LinkedIn and X are successively recording user growth in Poland (in 2025 LinkedIn had 8.2 million users, or 21.4% of the Polish population, and social platform X was popular among 5.33 million users, or 13.9% of the Polish population).

The benefits of social media functions are noted mainly in marketing and advertising (Kowalska, 2015; Stopczyńska, 2015; Magdalena Gręboszet al., 2016; Aichne et al., 2021; Łukasik, 2022). In human resource management, the possibilities of social media are also appreciated (Jędrych, 2015; Looy, 2016, pp. 173-186), but they are presented more often from the perspective of the employee rather than the manager.

Survey results posted on industry websites report high expectations from customers and employees about a manager's visibility and activity on social media. "According to Sproutsocial's research: 81% of us believe that if something important happens in business, the company's CEO should communicate about it; for 22% of Generation Y people, CEOs' presence on social media is an incentive to apply to the organization; 69% of employees expect their bosses to be active on social media" (Ofmański, 2025). The activity of managers in social media affects, among other things, the company's image, its financial performance, building trust, attracting talent, and increasing employee engagement, as confirmed by statistics and survey data (Neal, 2024). The effectiveness of social media in a manager's work can be spoken of only if the manager actively manages his online account. Polish managers, like foreign ones, are eager to use LinkedIn (97% of managers using social media say they use LinkedIn) (Drapała et al., 2019). Unlike their foreign counterparts, however, Polish managers are not using social media to its full potential. 67 CEOs of Poland's 100 largest listed companies have profiles on LinkedIn, but only 6% post on LinkedIn regularly - once a week or more on average (Giz, 2025).

3. Survey methodology and characteristics of the survey sample

The results presented in this article are part of a study on leadership behavior in crisis situations, carried out as part of a research grant entitled "Leadership and Communication with Stakeholders in the Changing Conditions of Organizational Operations" (UGB No. 853/2023). Respondents' answers to a question about a manager's professional activity in social media made it possible to determine how managers use this relatively new communication channel. The purpose of the study undertaken is to identify the social media activity of managers towards members of their team, employees from the organization where the manager is employed and employees from other organizations. The study was conducted in September 2023 by an external research firm, using a diagnostic survey method with the Computer Assisted Web Interview (CAWI) technique and a proprietary survey questionnaire. 198 managers representing various companies participated in the survey. The selection of companies for the survey was stratified randomly and included companies from 16 provinces in Poland.

Respondents participating in the survey included business owners (60 people), board members (35 people), senior managers (21 people), middle managers (50 people) and line managers (32 people). The majority of respondents were represented by men (109) while women numbered 89. Respondents represented in equal groups (66 respondents): small enterprises, with 10 to 49 people; medium-sized enterprises, with 50 to 249 people; and large enterprises with more than 250 people (66 respondents). Equal groups (66 each) were from the following industries: trade, manufacturing and services. The form of company ownership was also taken into account. A partnership was represented by 133 people, while a corporation was represented by 65 people. Companies with predominantly or exclusively Polish capital (166) and predominantly or exclusively foreign capital (32) took part in the survey.

Calculations were carried out using the PS IMAGO PRO 6.0 statistical program.

4. Survey results

Professional relationships are a multifaceted phenomenon, and therefore difficult to describe and study. Their quality and quantity are determined by a wide variety of factors, such as the size of the organization (small, medium or large enterprises), the type of organization (e.g., virtual, hybrid or traditional organization), the participants (employees, superiors, external stakeholders). Looking at professional relations in a holistic way, it should be noted that they are affected by the external environment (everything outside the organization's boundaries that can affect it) and internal environment (conditions and forces acting inside the organization)

(Griffin, 2004, p. 75; Moczydłowska et al., 2017, p. 20). However, within the framework of the external and internal environment, one can find a number of elements that specifically (each individually and in interconnection) affect labor relations (Wiechoczek, 2009, p. 21). The study included a question addressing how managers build relationships with their teams that is, with employees in the department they lead, with employees of the organization where they work, and with employees from other organizations. The managers' social media activity was taken into account (Table 1).

Table 1.
Distribution of managers' responses in terms of activities regularly undertaken on social media in relation to different stakeholder groups (employees) - summary table

No.	Type of activity of the manager in social media		Being proactive towards your team	Activity towards employees of the organization where I am employed/employed	Activity towards employees from other organizations
1.	Invite employees	N	74	57	38
		%	37%	29%	19%
2.	I accept invitations from others	N	63	80	53
		%	32%	40%	27%
3.	I write posts, blogs	N	32	51	46
		%	16%	26%	23%
4.	I comment on other people's posts, blogs, Wiki pages, post links	N	54	58	42
		%	27%	29%	21%
5.	I take part in group discussions	N	47	64	50
		%	24%	32%	25%
6.	I follow the service profiles	N	47	74	49
		%	24%	37%	25%
7.	I am actively building a network of connections/ contacts	N	57	74	56
		%	29%	37%	28%
8.	I share my professional knowledge, for example, through videos or posts published on the Internet	N	45	63	40
		%	23%	32%	20%
9.	I get information on users	N	45	76	55
		%	23%	38%	28%
10.	I am posting information about the company where I am employed/employed	N	45	66	46
		%	23%	33%	23%
11.	Other	N	16	17	10
		%	8%	9%	5%

Source: own research.

Professional relationships are a multifaceted phenomenon, and therefore difficult to describe and study. Their quality and quantity are determined by a wide variety of factors, such as the size of the organization (small, medium or large enterprises), the type of organization (e.g., virtual, hybrid or traditional organization), the participants (employees, superiors, external stakeholders).

From the responses of respondents, it can be seen that managers are far more likely to initiate contact on social media, with employees from their own team (37%) and employees from their own organization (29%) than with employees from other organizations (19%). The responses are for those who indicated that they reach out to social media activity involving sending invitations. A similar trend appears in the case of managers' acceptance of social media invitations. However, this is dominated more by managers' activity towards employees in the organization (40%) than towards their own team (32%). To a lesser extent, respondents accept an invitation sent by employees of other organizations (27%) (Tab. 2).

Table 2.
Initiating social media contact (managers' responses)

No.	Type of activity of the manager in social media		Being proactive towards your team	Activity towards employees of the organization where I am employed/employed	Activity towards employees from other organizations
1.	Invite employees	N	74	57	38
		%	37%	29%	19%
2.	I accept invitations from others	N	63	80	53
		%	32%	40%	27%
3.	I am actively building a network of connections/ contacts	N	57	74	56
		%	29%	37%	28%

Source: own research.

Comparing the results in Table 2, related to the manager's own activity of establishing relationships (the category of inviting employees) with his more passive behavior of accepting the invitation of others, it should be noted that there is a clear percentage difference in the manager's activity towards employees of the organization where the respondent is employed (inviting employees (29%) and accepting the invitation of others (40%)), in favor of accepting invitations. A similar situation can also be observed in the case of the manager's activity towards employees from other organizations (inviting employees (19%) and accepting invitations from others (27%)). However, the difference between the two is not as pronounced as in the previously discussed results. The situation is a little different in the case of a manager's activity towards his team. Slightly higher percentages accompany the manager's activity of inviting employees from the team (37%) than accepting invitations of employees from the team (32%).

Considering all the managers who took part in the survey, it should be noted that their social media activity in the two categories discussed (inviting employees and accepting invitations) does not look impressive. The results, in the case of activity of managers in relation to employees from their team, oscillate around 1/3 of all respondents, both in terms of inviting and accepting invitations. The results of social media activity of managers towards employees from the organization where they are employed are ambiguous. It appears quite high in accepting invitations (40%) and lower in sending them (29%). This may indicate low activity of managers in social media. In the context of inclusive leadership, which even emphasizes the

ability to network (especially outside the organization), such low results suggest a significant need for corrective measures (e.g. education, mentoring, benchmarking). In proceeding, it is of course necessary to identify the reasons why managers' active presence in social media is low.

The next results and their proportions are arranged in a similar way to the above results. Respondents' declarations about active networking with other employees of the organization where the manager is employed are slightly higher (37%) than in the other cases (activity towards his team (29%) and activity towards employees of other organizations (28%)). However, these are still not high activities.

In the questionnaire of the survey were taken into account social media activities that require more commitment from the manager, because they are related to, among other things, partial exposure, regularity in maintaining one's own account, building an image of oneself but also of the company the manager represents (Tab. 3).

Table 3.
Active participation of managers in social media

No.	Type of activity of the manager in social media		Being proactive towards your team	Activity towards employees of the organization where I am employed/ employed	Activity towards employees from other organizations
1.	I write posts, blogs	N	32	51	46
		%	16%	26%	23%
2.	I comment on other people's posts, blogs, Wiki pages, post links	N	54	58	42
		%	27%	29%	21%
3.	I take part in group discussions	N	47	64	50
		%	24%	32%	25%

Source: own research.

Looking at the results in Table 3, it can be seen that only one activity, participation in group discussions with employees of the organization where the manager is employed, shows the highest values. Therefore, it can be concluded that one-third of respondents declare this type of communication. In the case of other activities of managers, both towards their own team, towards employees from the organization where the manager is employed and towards employees from other organizations, the results rank below one-third of the total of those taking part in the survey.

Writing posts/blogs, commenting on other people's posts/blogs/Wiki pages, posting links for employees from the organization where the manager is employed, and participating with them in group discussions are the domain of respondents' activities. Fewer managers manifest these activities to their own team and employees from other organizations.

There are relationships on social media platforms that do not require direct interaction, such as watching someone on Twitter, commenting on LinkedIn and liking someone on Facebook (Korzyński, 2018, p. 80). What this kind of activity looks like for managers is presented in Table 4.

Table 4.
Obtaining information from social media about employees (managers' responses)

No.	Type of activity of the manager in social media		Being proactive towards your team	Activity towards employees of the organization where I am employed/ employed	Activity towards employees from other organizations
1.	I follow the service profiles	N	47	74	49
		%	24%	37%	25%
2.	I get information on users	N	45	76	55
		%	23%	38%	28%

Source: own research.

As an observer on social media, the manager is not more active than when networking (inviting employees or accepting their invitations), actively networking or writing posts/blogs, commenting on others' posts/blogs/wikis, posting links and participating in group discussions. He most often seeks information about employees within the organization (38%), but outside his own team (23%). Less often, he looks for information about employees from other organizations (28%). The results of observations of job profiles are arranged in a very similar way (Tab. 4).

Managers who have an active social media profile attract attention and gain trust (Mazur, 2020), and shape audience opinions.

Table 5.
Sharing information and knowledge on social media (managers' responses)

No.	Type of activity of the manager in social media		Being proactive towards your team	Activity towards employees of the organization where I am employed/ employed	Activity towards employees from other organizations
1.	I share my professional knowledge, for example, through videos or posts published on the Internet	N	45	63	40
		%	23%	32%	20%
2.	I am posting information about the company where I am employed/employed	N	45	66	46
		%	23%	33%	23%

Source: own research.

The surveyed managers share their knowledge on social media and provide information about the company where they are employed equally to employees of their team, employees of the organization where they are employed and employees from other organizations. In this case, the survey results differ little.

5. Conclusions

Based on respondents' answers, it should be concluded that managers are more likely to accept invitations than to initiate social media contact, indicating that they present a more passive than active attitude in this regard. Definitely, managers are more likely to initiate contact in social media, with employees from their own team and employees from their own organization, than with employees from other organizations. Respondents' declarations as to active networking with other employees of the organization where the manager is employed are slightly higher than in other cases. The activity of managers manifested in writing posts or blogs, commenting on them or participating in group discussions is also more intense towards employees from the organization where the managers are employed. So is observing work profiles and obtaining information about users. In contrast, there is no significant difference in the results for managers' active social media presence (e.g., participation in discussions) versus a more passive presence (e.g., observing company profiles). The results of the survey generally testify to the low activity of managers in social media.

The survey questionnaire did not include a question about the age of respondents. Perhaps this variable could help explain. Young generation Z has grown up with social media, while older generations are skeptical of this form of media and communication.

It is also worth looking for other reasons causing the reluctance of some managers to use social media in their professional relationships, such as fear of violating confidentiality of information, lack of time, unfamiliarity with the functioning of social media.

A certain distortion in the analysis of the results may be that not all groups in the metric categories were equal.

6. Summary

The need for greater use of social media in business has been signaled for many years (e.g. Jędrych, 2015, pp. 128-131). This communication channel is not fully appreciated, especially by managers. Unfortunately, not much has changed in this regard. Statistics show low activity of managers in social media. They usually refer to the type of social channel chosen by managers and their activity on the social account (whether publications appear and how often). There is still a lack of in-depth research on how leaders use social media within an organization. Additionally, the results included in industry reports, most often focus on CEOs, while little consideration is given to middle and lower level managers. The survey results included in this article show a small percentage of managers actively using social media. Their activity mainly manifests itself to employees of the organization where they are

employed, while to a lesser extent to employees of their own team and employees of other organizations. They are more willing to accept invitations than to initiate contact themselves. In the context of inclusive or network leadership, which even emphasizes the ability to network (especially outside the organization), the low scores suggest a significant need for corrective measures (e.g., education, mentoring, benchmarking). When proceeding, of course, it is necessary to identify the reasons why the active presence of managers in social media is low. It is difficult to figure out why some respondents did not choose to be active in social media. However, this is a reason to do more in-depth research, especially since there is not much published in this area.

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WORK-LIFE BALANCE SOLUTIONS OFFERED TO EMPLOYEES IN ENTERPRISES

Teresa MYJAK[1], Joanna WARZECHA-KUŹMA[2], Alicja MIŚ[3*]

[1] Akademia Nauk Stosowanych w Nowym Sączu; tmyjak@ans-ns.edu.pl, ORCID: 0000-0001-9282-3933
[2] Wodociągi Miasta Kraków; asia21kra@interia.pl
[3] Uniwersytet Ekonomiczny w Krakowie; alicja.mis@uek.krakow.pl, ORCID: 0000-0002-5264-0742
*Correspondence author

Purpose: The cognitive objective of this study is to identify organizational solutions related to the work-life balance of employees in enterprises. The research objective is to obtain answers to the question of what solutions are offered to employees to support the achievement of balance in both their professional and personal spheres.
Design/methodology/approach: This article presents issues concerning the balance between professional work and personal life. In the subsequent part of the study, based on research conducted, particular attention is given to organizational practices and solutions that support the achievement of work-life balance.
Findings: All surveyed organizations confirmed the benefits of providing employees with opportunities for professional and personal development through the co-financing of studies, training, or various types of courses. They also confirmed the positive outcomes of these initiatives, which translate into improved work quality and efficiency.
Research limitations/implications: Future research could be conducted with a larger number of enterprises, which would increase the generalizability of the results.
Practical implications: The considerations presented may be utilized in business practice by organizations, managers at various levels, and employees themselves.
Originality/value: This work lays the foundation for further research and scientific inquiry in the area of work-life balance solutions offered by Polish organizations.
Keywords: work-life balance, solutions promoting balance.
Category of the paper: Research paper.

1. Introduction

Issues related to work-life balance have recently become one of the most interesting social topics (Balla, 2025, p. 30). It is important to note the variety of initiatives undertaken at the organizational level to reconcile the two domains - work and life. Facilitating the reconciliation of work and personal life is described as an ongoing activity of enterprises, particularly in

providing appropriate working conditions, as well as organizing work and working time (Myjak, 2021, p. 48). It is emphasized that working conditions determine the quality of employees' lives (Fontaine, Pailhe, Remillon, 2025, p. 4), and that the balance between professional and private life influences the overall work experience of employees (Xie, Singh, López, 2025, p. 3024). As boundaries between work and private life become increasingly fluid, the risk of imbalance emerges (Lendzion, Telbuch, Gaszewski, 2025, p. 153). Therefore, work-life balance can be considered achieved when the relationship between professional and non-professional life is appropriate from the perspective of an individual and within a defined time frame.

The results of secondary research indicate that work-life balance has a significant and beneficial impact on employee work outcomes (Basuki, Suhermin, 2025, p. 1595). At the same time, these findings show that ensuring balance between private and professional life has become one of employees' main demands. Growing employee expectations in this area compel organizations to pay greater attention to employee needs, particularly to increase work time efficiency, reduce staff turnover, and ensure the effectiveness of motivational systems (Balla, 2025, p. 42). However, it should be emphasized that the full realization of employees' expectations is not always possible due to various factors on the part of employers. When considering the implementation of solutions that support work-life balance, organizations typically take into account the costs and burdens these solutions may impose on the entire enterprise.

Organizational efforts aimed at developing and implementing initiatives and practices related to work-life balance help organizations not only attract but also retain employees (Jung et al., 2025, p. 812). It is understandable that individuals who experience a lack of work-life balance are more likely to seek new employment or new positions (Fontaine, Pailhe, Remillon, 2025, p. 4). Therefore, employer initiatives aimed at supporting employees' work-life balance should not be one-time or occasional efforts, but rather take the form of comprehensive measures that are permanently integrated into organizational practice.

2. Theoretical Approach to Work-Life Balance

Work-life balance is reflected in maintaining harmony between an individual's professional and private life. An individualized approach to balancing professional and non-professional life leads to difficulties in establishing a single, universal, and commonly accepted definition. Balance is a state in which an individual's specific actions are aligned with their core values. It may be understood as the ability to achieve goals in various areas of life, as well as the maintenance of harmony between work and life.

The most general and widely recognized definition is offered by D. Clutterbuck (2005, p. 26). Clutterbuck describes work-life balance as a state in which an individual manages potential conflicts among various demands on their time and energy so that their desire for well-being and fulfilment is satisfied. S. Borkowska (2004, p. 54) defines work-life balance as the ability to combine work with other dimensions of human life, such as home, family, social activity, or personal interests. She also posits that balance is achieved when work does not dominate private life and, conversely, when non-work life is not pursued at the expense of work. E. Robak (2013, p. 75), on the other hand, argues that work-life balance refers to employees having control over how much time, when, and where they devote to activities in both their professional and personal lives. A rather broad perspective on work-life balance is proposed by P. Wilson (2012, p. 29). According to him, it is a state that arises when "all the forces and factors in life are in a satisfying and harmonious whole. Everything is in proportion and no one element stands out at the expense of others". In this sense, balance refers not only to the relationship between work and life, but also to configurations such as needs versus obligations, hopes versus ambitions, and the relationships between different spheres of life in various arrangements. Importantly, balance is not achieved through renunciation, but rather through the integration of all elements of a person's life.

Analysis of the presented definitions indicates that work-life balance can be understood on three levels: time balance, involvement balance, and satisfaction balance (Greenhaus, Collins, Show, 2003, p. 513). However, the proportions of involvement and the time allocated to various spheres of human life do not necessarily have to be equal. These proportions may also change over the course of a person's life and as a result of life changes. An appropriate level of balance between different areas of human activity does not mean that these areas must be equivalent.

It is important to view professional work and private life as complementary rather than opposing domains. This perspective enables satisfaction and a sense of well-being across all areas of life, without requiring difficult decisions that may not positively impact employees' actions (Gotowska, 2014, p. 64). Thus, work-life balance can be understood as maintaining harmony between an individual's work and private life, while acknowledging that the state of balance may mean something different for different people. There is no single, universal point of life balance.

3. Research Methodology

The research was conducted through standardized interviews with representatives of selected enterprises (where work-life balance solutions are in place or a work-life program has been implemented), and a standardized questionnaire distributed among employees of these organizations. The interviews were conducted through direct conversation, based on an original questionnaire developed by the author.

The empirical research was conducted from September 2022 to March 2023. The research process was divided into several stages. Key to the issues presented in this article were two stages in which data regarding companies and their work-life balance offerings was collected. The basis for differentiating these stages was the data collection technique used: the first stage employed interviews, and the second stage employed surveys.

First, interviews were carried out with representatives of organizations in which work-life balance solutions were in place or a work-life balance program had been implemented. These organizations included a Municipal Enterprise, a Research Institute, and an Educational Institution. The sampling was purposive. In the second stage, a survey was conducted among employees of the same organizations. As a result of the above actions, the study covered three organizations and 309 employees working in them. The collected empirical data were analyzed. The data obtained from interviews with organization representatives served as the basis for qualitative analysis and complemented the quantitative analysis of data collected from questionnaires completed by employees of the surveyed enterprises.

4. Research Results

One of the most significant issues examined and analyzed was the number and types of work-life balance solutions offered by the organizations. For each organization participating in the study, a separate table was developed: Municipal Enterprise (Table 1), Research Institute (Table 2), and Educational Institution (Table 3).

Based on information obtained during an interview with a representative of the Municipal Enterprise, the company offers its employees various work-life balance solutions, which are listed in Table 1. As additional solutions available to employees, the representative of the Municipal Enterprise indicated subsidies for organized holidays for employees' children as well as "flexible working hours". This arrangement involves the employer specifying a time range within which the employee can independently decide when to start work. Employees are required to complete the number of hours specified by their applicable daily working time before finishing work. The solutions offered by the Municipal Enterprise were available to all employees, with the exception of those employed under civil law contracts, who were not included in the work-life balance program.

Particular attention should be paid to the solution of guaranteeing a return to work after parental leave, which was confirmed as being offered by only 30% of respondents. This may indicate a lack of awareness of this entitlement among the remaining participants. Furthermore, some respondents indicated the availability of certain solutions that were not mentioned by the representative of the Municipal Enterprise, such as:

- Adjusting parents' vacation to the school year - indicated by 43% of respondents,
- Days or hours off to attend to important personal matters - 27% of respondents,
- Access to information, training, and work tools during parental or childcare leave - 8% of respondents.

Table 1.
Work-Life Balance Solutions – Municipal Enterprise

No.	Solution	Municipal Enterprise				
		Employer	Employees			
			Availability		Utilization	
			Total Response	%	Total Response	%
1	Co-financing studies, training, and professional development courses	yes	110	57%	59	31%
2	Support in caring for children and dependents	yes	0	0%	0	0%
3	Holiday vouchers or gift packages	yes	184	95%	175	91%
4	Co-financing education for employees' children	no	1	1%	0	0%
5	Co-financing or organizing recreation	yes	185	96%	175	91%
6	Additional allowances for the birth of a child	no	2	1%	0	0%
7	Additional health insurance for employees	yes	184	95%	174	90%
8	Health insurance for the employee's family	yes	164	85%	48	25%
9	Days or hours off to attend to important personal matters	no	52	27%	45	23%
10	The possibility to perform certain tasks at home	no	7	4%	3	2%
11	Offering extended, paid parental leave	no	0	0%	0	0%
12	Providing childcare during business trips or training	no	0	0%	0	0%
13	Guarantees of return to work after parental leave	yes	57	30%	46	24%
14	Adjusting parents' vacation to the school year	no	83	43%	75	39%
15	Assistance from a company psychologist	no	0	0%	0	0%
16	Organizing opportunities for employees and their families to spend time together outside of work	yes	148	77%	116	60%
17	Subsidizing employees' sports activities	yes	185	96%	87	45%
18	Access to information, training, and work tools during parental or childcare leave	no	15	8%	12	6%
19	Other	yes	114	59%	98	51%
20	None	-	-	-	13	7%

Source: own elaboration.

This may indicate the existence of informal solutions, implemented exclusively within selected organizational units.

According to the representative, employees are eager to utilize the solutions offered. An analysis of the survey responses in this regard revealed that employees most frequently made use of the following:

- Holiday vouchers or gift packages - 91% of respondents,
- Co-financing recreation - 91% of respondents,
- Additional health insurance for employees - 90% of respondents.

To a much lesser extent, respondents utilized the following solutions:

- Organizing opportunities for employees and their families to spend time together outside of work - 60% of respondents.

- Other - subsidizing organized vacations for employees' children or flexible working hours - 51% of respondents.
- Subsidizing employees' sports activities - 45% of respondents.
- Co-financing studies, training, and professional development courses - 31% of respondents.

On the other hand, among the solutions not indicated as offered by the representative of the Municipal Enterprise, the following were used respectively:

- Adjusting parents' vacation to the school year - 39% of respondents,
- Days or hours off to attend to important personal matters - 23% of respondents,
- Access to information, training, and work tools during parental or childcare leave - 6% of respondents.

7% of employees of the Municipal Enterprise did not use any of the solutions.

Table 2 contains the work-life balance solutions implemented by the Research Institute.

According to information obtained during interviews, the Research Institute offered its employees a relatively diverse range of solutions supporting work-life balance. An additional solution offered to employees turned out to be "flexible working hours", as indicated by the representative of this organization. It can be observed that a significant portion of the solutions declared by the organization as being offered were indicated by less than half of the respondents. This may suggest that they did not have full knowledge or awareness of which solutions they could take advantage of.

Some surveyed employees indicated that certain solutions were available, even though they were not officially declared by the representative of the Research Institute, for example:

- Days or hours off to attend to important personal matters - 32% of responses.
- Health insurance for the employee's family - 30% of responses.
- Access to information, training, and work tools during parental or childcare leave - 9% of responses.
- Additional allowances for the birth of a child - 8% of responses.

Regarding solutions requiring financial expenditure - this may indicate that the Research Institute does not classify them as work-life balance solutions. Similarly to the Municipal Enterprise, these remaining solutions may function on an informal basis.

Table 2.
Work-life balance solutions - Research Institute

No	Solution	Research Institute				
		Employer	Employees			
			Availability		Utilization	
			Total Response	%	Total Response	%
1	Co-financing studies, training, and professional development courses	yes	39	49%	30	38%
2	Support in caring for children and dependents	no	3	4%	0	0%
3	Holiday vouchers or gift packages	yes	74	94%	63	80%

Cont. table 2.

4	Co-financing education for employees' children	no	0	0%	0	0%
5	Co-financing or organizing recreation	yes	35	44%	29	37%
6	Additional allowances for the birth of a child	no	6	8%	2	3%
7	Additional health insurance for employees	yes	71	90%	66	84%
8	Health insurance for the employee's family	no	24	30%	10	13%
9	Days or hours off to attend to important personal matters	no	25	32%	20	25%
10	The possibility to perform certain tasks at home	yes	33	42%	24	30%
11	Offering extended, paid parental leave	no	0	0%	0	0%
12	Providing childcare during business trips or training	no	0	0%	0	0%
13	Guarantees of return to work after parental leave	yes	24	30%	11	14%
14	Adjusting parents' vacation to the school year	yes	26	33%	15	19%
15	Assistance from a company psychologist	no	1	1%	0	0%
16	Organizing opportunities for employees and their families to spend time together outside of work	no	2	3%	1	1%
17	Subsidizing employees' sports activities	yes	63	80%	22	28%
18	Access to information, training, and work tools during parental or childcare leave	no	7	9%	2	3%
19	Other	yes	17	22%	15	19%
20	None	-	-	-	2	3%

Source: own elaboration.

According to the representative of the Research Institute, employees willingly made use of the solutions offered. Based on the responses of survey participants, the most commonly utilized benefits included:

- Additional health insurance for employees - 84% of respondents.
- Holiday vouchers - 80% of respondents.

To a significantly lesser extent, respondents reported using the following:

- Co-financing studies, training, and professional development courses - 38% of respondents.
- Co-financing or organizing recreation - 37% of respondents.
- The possibility to perform certain tasks at home - 30% of respondents.
- Guarantees of return to work after parental leave - 14% of respondents.
- Adjusting parents' vacation to the school year -19% of respondents.
- Subsidizing employees' sports activities - 28% of respondents.
- Other, such as flexible working hours -19% of respondents.

Among the solutions not officially indicated as offered by the Research Institute, utilization rates were as follows:

- 25% of respondents - days or hours off to attend to important personal matters.
- 13% of respondents - health insurance for the employee's family.
- 3% of respondents - access to information, training, and work tools during parental or childcare leave.
- 3% of respondents - additional allowances for the birth of a child.

Notably, 3% of surveyed employees at the Research Institute did not take advantage of any available solutions.

Table 3 presents the work-life balance solutions offered at the Educational Institution.

Table 3.
Work-Life Balance Solutions – Educational Institution

No	Solution	Educational Institution				
		Employer	Employees			
			Availability		Utilization	
			Total Response	%	Total Response	%
1	Co-financing studies, training, and professional development courses	yes	29	78%	26	70%
2	Support in caring for children and dependents	no	0	0%	0	0%
3	Holiday vouchers or gift packages	no	0	0%	0	0%
4	Co-financing education for employees' children	no	0	0%	0	0%
5	Co-financing or organizing recreation	yes	33	89%	32	86%
6	Additional allowances for the birth of a child	no	0	0%	0	0%
7	Additional health insurance for employees	no	0	0%	0	0%
8	Health insurance for the employee's family	no	0	0%	0	0%
9	Days or hours off to attend to important personal matters	no	6	16%	6	16%
10	The possibility to perform certain tasks at home	no	0	0%	0	0%
11	Offering extended, paid parental leave	no	0	0%	0	0%
12	Providing childcare during business trips or training	no	0	0%	0	0%
13	Guarantees of return to work after parental leave	yes	15	41%	15	41%
14	Adjusting parents' vacation to the school year	yes	21	57%	19	51%
15	Assistance from a company psychologist	no	0	0%	0	0%
16	Organizing opportunities for employees and their families to spend time together outside of work	no	1	3%	1	3%
17	Subsidizing employees' sports activities	no	0	0%	0	0%
18	Access to information, training, and work tools during parental or childcare leave	no	0	0%	0	0%
19	Other	no	0	0%	0	0%
20	None	-	-	-	3	8%

Source: own elaboration.

Among the organizations studied, the Educational Institution offered its employees the fewest work-life balance solutions. No additional measures beyond those included in the supplementary sheet of the interview questionnaire were identified.

Respondents indicated that the following work-life balance solutions were available to them:

- Co-financing studies, training, and professional development courses - 78% of respondents.
- Co-financing or organizing recreation - 89% of respondents.
- Guarantees of return to work after parental leave - 41% of respondents.
- Adjusting parents' vacation to the school year - 57% of respondents.

Analysis of the responses provided by employees of the Educational Institution suggests that they either do not possess full awareness of the available solutions or do not perceive them as measures supporting work-life balance. Consequently, their actual utilization of these solutions is even lower, as reflected by the following data:

- Co-financing studies, training, and professional development courses - 70% of respondents.
- Co-financing or organizing recreation - 86% of respondents.
- Guarantees of return to work after parental leave - 41% of respondents.
- Adjusting parents' vacation to the school year - 51% of respondents.

It is noteworthy that 16% of respondents identified "days or hours off to attend to important personal matters" as a solution offered by the Educational Institution. The same individuals reported utilizing this option, which, as in the case of other organizations studied, may indicate its informal character.

8% of surveyed employees at the Educational Institution did not use any of the available solutions.

It is important to emphasize that the representatives of all the surveyed organizations confirmed that candidates are informed about the available benefits during recruitment interviews.

In summary, results regarding the utilization of work-life balance solutions offered by the surveyed organizations indicate that the highest proportion of employees made use of the following:

- Additional health insurance for employees - 78% of respondents.
- Holiday vouchers - 77% of respondents.
- Co-financing or organizing recreation - 76% of respondents.

To a lesser extent, the following solutions were utilized:

- Organizing opportunities for employees and their families to spend time together outside of work - 38% of respondents.
- Co-financing studies, training, and professional development courses - 37% of respondents.
- Other (such as flexible working hours or subsidies for organized holidays for employees' children) - 37% of respondents.
- Co-financing recreation - 37% of respondents.
- Adjusting parents' vacation to the school year - 35% of respondents.
- Subsidizing employees' sports activities - 35% of respondents.

Another issue addressed during the research concerned the organizations' own perceptions of work-life balance solutions. The representatives of the surveyed organizations were asked to identify which work-life balance solutions they considered most beneficial from the perspective of the organization itself. Their responses were as follows:

- **Municipal Enterprise**
  - Co-financing studies, training, and professional development courses.
  - Additional health insurance for employees.

  - Organizing opportunities for employees and their families to spend time together outside of work.
  - Subsidizing employees' sports activities.
  - Flexible working hours.
- **Research Institute**
  - Co-financing studies, training, and professional development courses.
  - Flexible working hours.
- **Educational Institution**
  - Co-financing studies, training, and professional development courses.

5. Conclusions

A review of the relevant literature, along with the results of empirical research, confirmed that employees' perceptions of work-life balance are largely individualized, depending on their current life circumstances. The study revealed discrepancies between the solutions offered by organizations and those actually utilized by employees. As a result of the conducted research, specific work-life balance solutions implemented in practice within organizations were identified. It was found that the range of solutions offered varies significantly depending on the organization, its nature, and specific operational conditions.

The solutions offered by all organizations surveyed included:

- Co-financing studies, training, and professional development courses.
- Co-financing or organizing recreation.
- Guarantees of return to work after parental leave.

All organizations agreed on the benefits of providing employees with opportunities for professional and personal development through co-financing of studies, training, or various types of courses. The representatives of the organizations surveyed confirmed the positive outcomes of these initiatives, which, in their view, translate into higher quality and efficiency of work. Co-financing of studies, training, or professional development courses was unanimously recognized by all three representatives as one of the key solutions supporting work-life balance. The organizations studied regard employee development as advantageous, contributing to enhanced qualifications and work quality. Additional health insurance, which enables employees to access specialists and receive medical advice more quickly, has a positive effect on reducing absenteeism and improving health, as does the co-financing of sports activities. Joint activities and integration strengthen teamwork and communication, while flexible working hours largely address issues of absenteeism and tardiness, ensuring that employees are available and able to fulfil all assigned tasks.

Directions for further research emerging from the study should focus on identifying the scope of solutions supporting work-life balance, including their formalization, employee attitudes toward flexible employment options and the extent to which they are utilized within organizations, as well as the equalization of opportunities and organizations' capabilities in offering employees solutions that support work-life balance.

A limitation of the study was the limited availability of only three similar organizations, financed fully or partially from the state budget. Furthermore, the range of solutions offered was similar to the characteristics of the organizations studied. The consequences of a certain degree of flexibility in other companies (e.g., those with different sizes, industries, or operational areas) would demonstrate possible solutions and their implications for adaptation in companies similar to the ones studied.

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EMPLOYEE VOLUNTEERING AS A FORM OF SOCIAL ACTIVITY OF AN ORGANIZATION – THE CASE OF AN OPEN-PIT MINE IN THE MAŁOPOLSKA VOIVODESHIP

Dominika NIEĆ[1*], Grzegorz ŁUKASIEWICZ[2*]

[1] Kopalnia Wapienia "Czatkowice" sp. z o.o.; d.niec@czatkowice.com.pl, ORCID: 0009-0002-7802-2317
[2] Uniwersytet Ekonomiczny w Krakowie; lukasieg@uek.krakow.pl, ORCID: 0000-0001-7203-2413
* Correspondence author

Purpose: The aim of the article is to evaluate the role of employee volunteering as a form of social activity of an organization and to determine to what extent the volunteering activities of the mine are noticed and assessed by its employees, former employees, and stakeholdrs of the local labour market.
Design/methodology/approach: A diagnostic survey method and a questionnaire technique were applied, covering five areas of social activity of an organization, including in detail the area of volunteering. The study involved 293 respondents, of whom 54% were men (N = 158), 38.2% were women (N = 112), and in 23 (7.8%) cases, respondents did not provide gender data. Regarding the respondents' relationship with the mine, the largest group consisted of its current employees (48.1%, N = 141), followed by individuals not professionally associated with the mine (26.6%, N = 78) and former retired employees of the organization (25.3%, N = 74).
Findings: The results indicate that employee volunteering is perceived both within the organization and by some external stakeholders. Volunteering activities are rated particularly highly by former employees, who confirm the organization's activity in this area in over 60% of cases. Significant differences are also observed regarding gender – men perceive the organization's volunteering activities more often than women.
Research limitations/implications: Volunteering activities, as an element of the broader construct of social activity of an organization, have a significant impact on the organization's image in the local labour market. For this reason, future research should focus on detailed communication channels promoting both the idea of volunteering and the implemented projects in which every member of the local community can actively participate.
Originality/value: In the literature, there is a noticeable lack of empirical research analyzing the differences in the perception of employee volunteering between various stakeholder groups (employees, former employees, and external stakeholders). In this context, the obtained research results emphasize the importance of volunteering as a tool for strengthening relationships with the local community, enhancing relationships with the environment, and shaping a pro-social image of the organization among different stakeholder groups.
Keywords: volunteering, social activity of an organization, employee volunteering, forms of volunteering.
Category of the paper: Research paper.

1. Introduction

Modern industrial organizations operate under conditions of increasing social pressure, which requires them to undertake actions going beyond their core operational activities. One of the significant areas of corporate social activity is employee volunteering, which serves as a tool for building relationships with the local community and strengthening the organization's social capital. Its importance is growing particularly in entities strongly embedded in the local environment, such as open-pit mines, whose operations naturally affect the living conditions of residents. The aim of this article is to evaluate the role of employee volunteering as a form of organizational social activity and to analyze how volunteering activities are perceived by employees, former employees, and external stakeholders. The conducted study allows for determining the extent to which volunteering constitutes an effective tool for shaping the organization's image in the local labour market and to what degree it supports the building of lasting relationships with the local community.

2. Volunteering as a component of social activity of an organization

Contemporary organizations function within an environment of rising social expectations, which verifies the transparency of their ethical actions. In this context, codes of ethics and internal regulations defining the principles of responsible conduct toward stakeholders become a point of reference for organizations (Porter, Kramer, 2003). An important test for a company's operations is the ability of its representatives to behave in problematic situations. Responsibility is manifested not only in appropriate attitudes but also in the ability to maintain social dialogue with the immediate environment, monitor social moods, and identify potential threats early (Nieć 2024; Nieć, Łukasiewicz, 2022). Given these challenges, the concept of organizational social activity takes on particular importance for modern organizations. This term refers to all purposeful, often long-term, initiatives and actions of an organization consisting of influencing its immediate environment, going beyond normal duties related to running a business. These efforts are expressed in undertaking activities for the benefit of both the individual and the group, aimed at realizing tasks that satisfy highly valued social values in the organization's immediate vicinity, even at the cost of additional financial outlays incurred by the organization through appropriate entities established over the years to conduct dialogue with its stakeholders (Nieć, 2024, p. 244).

According to the concept of corporate social responsibility, enterprises should demonstrate social trust and respond to the needs of the local environment. Participating in social development, ensuring better living conditions for the local community and supporting civic

initiatives are manifestations of a mature social strategy (Adkins, 1999, pp. 37-42). Organizational social activity, carried out toward both internal and external stakeholders, shapes a positive image of the enterprise in the local labour market, builds its reputation, and constitutes a lasting element of competitive advantage.

Organizational social activity should be conducted in a long-term and strategic manner so as to connect the expectations of stakeholders with business goals, without colliding with the company's development strategy. Within the framework of this activity, companies implement various forms of influence on the environment by realizing tasks that satisfy highly valued social values, including, among others, patronage, sponsorship, and volunteering (Fig. 1).

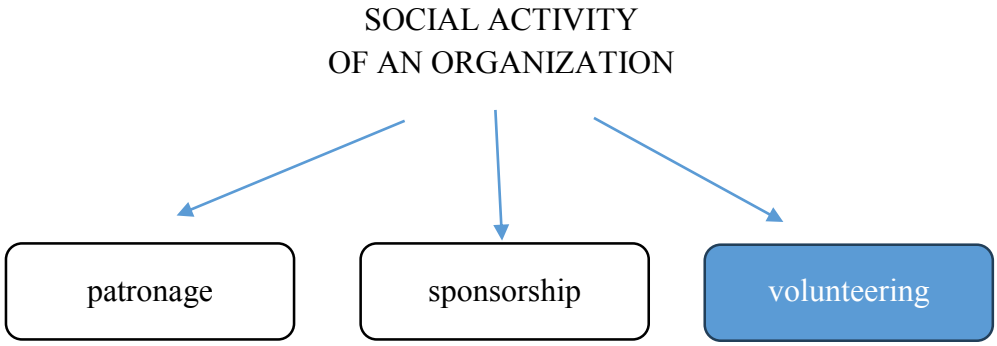

Figure 1. Volunteering as a component of social activity of an organization.

Source: own elaboration based on (Nieć, 2024, p. 236).

At the turn of the 19th and 20th centuries, the institution of patronage, due to its popularity, was used by various social, economic, or religious entities (Czubała, Jonas, Wojnarowska, 2017, p. 81). After World War II, it developed in the direction of sponsorship, which eventually emerged as a separate form of cooperation between entities (Gołaszewska-Kaczan, 2009, p. 110). Patronage is identified with acts of charity, devoid of a commercial dimension (Kopeć, 2014, pp. 113-115), whereas sponsorship currently constitutes a partnership agreement in which the sponsor provides financial or material resources in exchange for image benefits (Mruk, 2012, p. 221).

Alongside patronage and sponsorship, volunteering is gaining increasing importance, which, in the context of social activity, can play a key role in many organizations (Schimanek, 2012). Employee volunteering is a specific form of it, supported by the company and involving employees in social actions. This type of activity strengthens employees' sense of belonging to the organization, shapes their social sensitivity, and integrates employee teams around shared values.

In the context of corporate social responsibility, employee volunteering is one of the most effective tools for building relationships with the local community. Such actions can take various forms — from helping those in need and supporting public institutions to environmental and educational projects. The measurable effect is not only an increase in social trust but also the strengthening of the company's reputation as a responsible and engaged organization.

3. Employee volunteering - basic assumptions

The beginnings of volunteering date back to 1920, when the Swiss Pierre Ceresole organized the camp *Service Civil Volontaire*, as a reaction to the aftermath of World War I. At the camp, he gathered volunteers from countries that had previously fought each other to rebuild a village near Verdun. At the same time, in the United States, the first pioneers arriving from across the ocean had to learn to cooperate, laying the foundations for local communities. Especially after World War II, many initiatives cultivating the idea of volunteering were created (e.g., UNESCO). The creation of the European Union also influenced the development of the idea of volunteering on the old continent. Currently, national volunteering institutions associate in cooperation networks, develop joint action programs, and conduct policies for the promotion and development of voluntary work[1].

The essence of volunteering is the voluntary nature of its provision (*voluntarius* – voluntary). The National Network of Volunteering Centers has developed the following definition of this term: *volunteering* is voluntary, unpaid, conscious work for the benefit of others or the entire society, going beyond family, friendship and acquaintance relationships (Schimanek, 2012, pp. 11-24). Within state legislation, since 2003, the Act on Public Benefit Activity and Volunteerism has also defined a volunteer, stating that a *volunteer* is a natural person who voluntarily and without remuneration performs services specified in the Act (Journal of Laws of 2024, item 1491).

S.T. Güntert, T. Wehner, and H.A. Mieg (2022) approach the issue of volunteering in a similar spirit. In their opinion, *volunteering* refers to non-profit activity, including unpaid, independent, or institutionally organized, socially oriented work; it means personal, non-profit-oriented engagement associated with regular, project- or event-related expenditure of time, which in principle could also be performed by another person and potentially could also be paid for.

There are many types of volunteering depending on the social need the volunteers are to be engaged in, the goal and time of its provision, and the dominant type of volunteers. Among the types of volunteering, one can mention:

- NGOs (Non-Governmental Organizations) are all entities that are not units or bodies of public administration and whose activity is not aimed at achieving profit. A characteristic feature of non-governmental organizations is the lack of links with public authorities (non-governmental organizations). Most often, the term "non-governmental organization" is used in relation to foundations and associations[2].

[1] About the Corps, https://www.korpussolidarnosci.gov.pl/pl (access date: 10/02/2024).
[2] Non-governmental organizations - Definition - ngo.pl (access date: 10/02/2024); https://fakty.ngo.pl/slownik/organizacje-pozarzadowe#:~:text=Organizacje%20pozarz%C4%85dowe%20-%20Definicja%20-%20ngo.pl.

- employee volunteering is the voluntary participation of employees in work for the benefit of those in need, supported by the company through financial, material, and human support, offering the time and skills of employees (Czubała, Jonas, Wojnarowska, 2017, pp. 116-117). Employee volunteering can take various forms, including:
  - participation in social and charitable campaigns, most often carried out by NGOs,
  - the company's own social programs; the company designs and implements the programs itself, engaging willing employee-volunteers,
  - proprietary employee programs, within which employees themselves prepare projects to help others. The most frequently implemented form is grant competitions with the support of employee-volunteers. The granted support usually takes a financial form with a predetermined amount. In such projects, the cyclical nature of their conduct is important,
  - employee collection – employee volunteering can also take the form of a voluntary employee collection, e.g., a collection of gifts (clothes, food, office supplies), a one-time or cyclical contribution deducted from salary, or blood donation campaigns,
- senior volunteering, otherwise known as "silver volunteering"; sharing one's knowledge, time, and experience with those in need. This type of volunteering can be a tool for preventing many problems of people in senior age, especially loneliness, marginalization, or even social exclusion, as well as a way to utilize their great potential (Górecki, 2013).
- school volunteering is one of the most popular types of volunteering, mainly due to its accessibility for children. Volunteering circles are formed in schools, where students can develop their passions and act for the benefit of the school, but also support local institutions or organizations[3].
- sports volunteering is voluntary support in the organization of competitions, tournaments, and championships. This is most often mentioned during the organization of sports events, competitions, or recreational championships. Volunteers often help organizers in various ways, e.g., monitoring a marathon route, overseeing the course of the competition, supporting participants, etc.

One of the basic assumptions within the mission, vision, and strategy of every enterprise should be participation in social development, ensuring better living conditions for the local community, and generating profit, which should partially be allocated to the targeted needs of this community (Kwiecińska, 2014, pp. 52-53). Companies should demonstrate that they deserve the trust of local communities, as this type of stakeholder reacts very dynamically to any changes, threats, environmental degradation, or disturbances of spatial order (Kuciński, 2001, pp. 34-35). In turn, a socially active company can derive benefits from the local

[3] https://www.ceo.org.pl (access date: 10/02/2024).

community, which, thanks to properly conducted dialogue, makes it credible in the eyes of public opinion and shapes its positive image (Adkins, 1999, pp. 37-42).

The social activity of industrial organizations can include a wide range of initiatives — from patronage and sponsorship of cultural, sports, or scientific events to volunteering programs engaging employees in pro-social and pro-ecological actions. Particularly important are actions supporting the local community through cooperation with education, supporting charitable institutions, and initiatives for former employees (e.g., retirees and pensioners), which strengthens intergenerational bonds and the company's social capital.

4. Applied research methods

The research on attitudes toward volunteering was conducted in 2024. It covered employees of an open-pit mine (hereinafter referred to as „the mine") located in the Małopolska voivodeship and individuals representing the local labor market, and was part of a broader research project aimed at indicating the relationship between an organization's social activity and its image in the local labor market. The research method applied in this study was a diagnostic survey, and the technique was a questionnaire survey.

The questionnaire used covered a total of 5 areas: the organization's cooperation with education, sports activity, local traditions, volunteering, and the company's image in the local labor market. Volunteering, which is the subject of consideration in this article, was represented by 6 statements, the first of which concerned the respondents' knowledge of individual forms of volunteering supported by the organization; the remaining 5, along with the Cronbach's alpha coefficient, are presented in Table 1. The aforementioned coefficient reached a very high value of 0.935, which means that the research tool used was characterized by high reliability. The statements presented in the table were assessed by respondents using a five-point Likert scale (from 1 – strongly disagree to 5 – strongly agree).

Table 1.
Cronbach's alpha parameter values for the volunteering area, calculations in SPSS

Statement	Cronbach's alpha parameter with 95% confidence interval
Full	**0,935 (0,915-0,951)**
2. The mine provides opportunities for volunteering activity to its employees.	**0,923 (0,901-0,942)**
3. The mine provides opportunities for volunteering activity to members of the local community.	**0,915 (0,888-0,936)**
4. The mine is involved in volunteering activity on the local labor market.	**0,921 (0,899-0,941)**
5. Through the mine's actions in recent years, volunteering has spread on the local labor market.	**0,914 (0,883-0,937)**
6. Volunteering actions popularized by the mine shape pro-social attitudes among the local community.	**0,929 (0,904-0,949)**

Source: own elaboration.

The study involved 293 respondents, of whom 54% were men (N = 158), 38.2% were women (N = 112), and in 23 (7.8%) cases, respondents did not provide gender data. The survey respondents were divided into three groups defined by their relationship with the studied organization:

- current employees,
- retired employees and pensioners,
- external stakeholders of the mine, represented, among others, by the Municipal Office, Labor Office, local education (schools, kindergartens), charitable institutions, rural housewives' circles, Volunteer Fire Departments, and sports clubs.

The largest group of respondents consisted of current mine employees (48.1%, N = 141), followed by individuals not professionally associated with the mine (26.6%, N = 78) and former retired employees of the organization (25.3%, N = 74). Among men (N = 158), 103 worked at the mine at the time of the study (65.2%), 48 were former employees (30.4%), and 7 men were not associated with the enterprise. Among women (N = 112), the largest group consisted of individuals not associated with the mine (N = 56, 50%), the next group in terms of size were women working at the mine (N = 30, 26.8%), while 26 women identified as former employees (23.2%).

5. Analysis of the obtained results

The following analysis will cover two statements from the volunteering area. They will allow for an assessment of the discussed activity from an intra- and extra-organizational perspective and from the point of view of selected demographic characteristics of the respondents. In the case of the first statement, the respondents assessed whether the mine provides volunteering opportunities for its employees. Out of a total of 293 surveys, 289 were accepted for the final analysis of this statement, as in the remaining four cases, the answer was not marked. The obtained answers are contained in Table 2. Its analysis shows that nearly half of the respondents (48.8%) agreed with this statement, 42.6% of respondents provided a neutral answer, and only 8.8% of the surveyed did not express approval. More information on this statement is provided by the analysis of the answers given regarding the respondents' relationship with the studied organization and gender. Demographic characteristics shown in the survey metric, such as the age of the respondents, their level of education, or the length of employment, did not show an influence on the analyzed statements.

Table 2.
Assessment of Statement 2 from the volunteering area

Statement	Answers (N = 289)	
The mine provides opportunities for volunteering activity to its employees.	Strongly disagree	3.1% (N = 9)
	Rather disagree	5.5% (N = 16)
	Hard to say	42.6% (N = 123)
	Rather agree	26.3% (N = 76)
	Strongly agree	22.5% (N = 65)

Source: own elaboration.

Figure 1 presents a very interesting distribution of answers to the analyzed statement classified according to the respondent's relationship with the mine. The obtained answers differ significantly depending on whether the respondent is a current mine employee, a former employee, or has never been professionally associated with it. In the case of former and current employees, the assessments confirming this statement (strongly agree, rather agree) are very similar, exceeding 60%. It turns out, however, that former employees are more certain that the mine provides opportunities for volunteering activity to its employees than current employees – 42.7% of "strongly agree" ratings versus 21.7%. At the same time, among respondents not professionally associated with the mine, the answer "hard to say" definitely prevailed – as many as 83.8% of respondents from this group chose this answer.

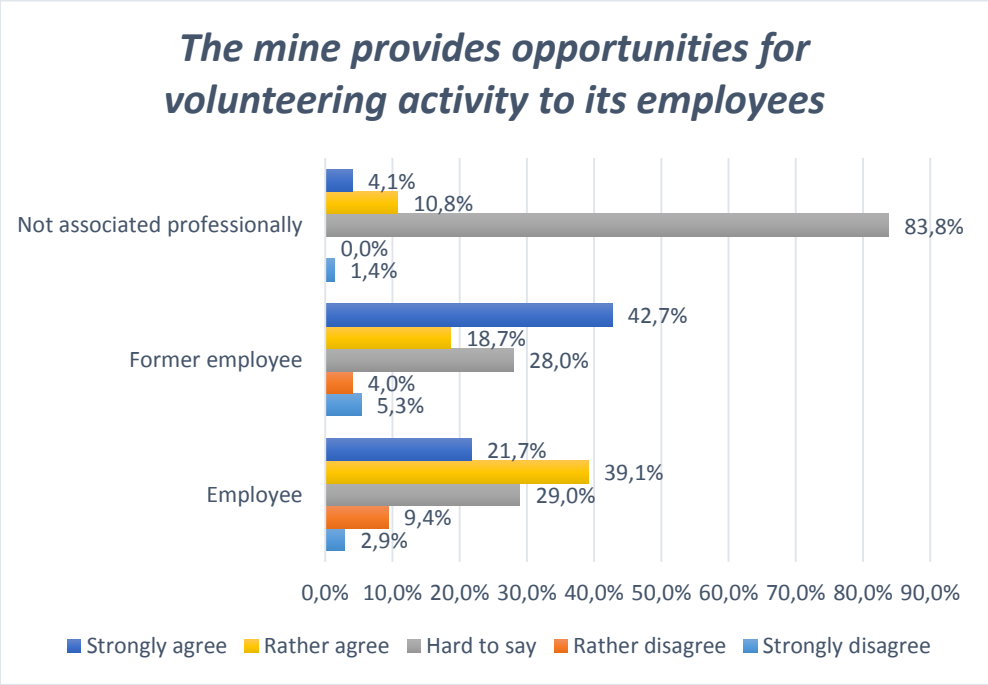

Figure 1. Assessment of the statement "the mine provides opportunities for volunteering activity to its employees" according to the respondent's relationship with the organization (in %).

Source: own elaboration.

The same statement was presented in Figure 2, this time divided by the gender of the respondents. In this case, a clear influence of this demographic characteristic on the answers is also visible. Over 56% of the answers given by men expressed approval for the discussed statement (strongly agree, rather agree); in the case of women, it was 38.5%. The scepticism

expressed by women is also visible in the case of the "hard to say" answer. Nearly 57% of women chose this answer, while among men, this percentage was 31.6%. The presented results indicate that men agree more often than women with the statement that the mine provides opportunities for volunteering activity to its employees.

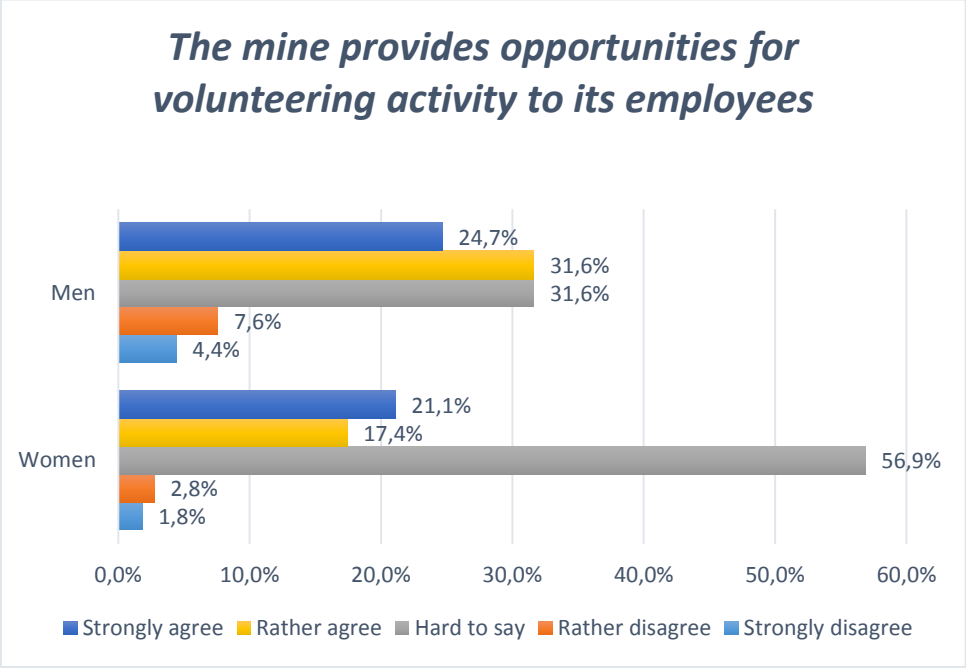

Figure 2. Assessment of the statement "the mine provides opportunities for volunteering activity to its employees" according to gender (in %).

Source: own elaboration.

The second analyzed statement examines the degree to which the mine's external volunteering activities, going beyond its formal structures, are noticed by respondents from the local labor market. The overall assessment of the statement "the mine is involved in volunteering activity on the local labor market" is presented in Table 3. The obtained results are very similar to the assessment of Statement 2 presented in Table 2. 48.1% of respondents confirm the mine's involvement in volunteering activity on the local labor market. 42.6% have no opinion on this matter. Also, in the case of this statement, it is worth analyzing the distribution of the obtained answers according to the respondents' relationship with the mine and according to their gender.

Table 3.
Assessment of Statement 4 from the volunteering area

Statement	Answers (N = 289)	
The mine is involved in volunteering activity on the local labor market	Strongly disagree	2.8% (N = 8)
	Rather disagree	6.2% (N = 18)
	Hard to say	42.6% (N = 124)
	Rather agree	27% (N = 78)
	Strongly agree	21.1% (N = 61)

Source: own elaboration.

Figure 3 presents the assessment of the analyzed statement according to the respondent's relationship with the studied organization. Also in this case, former employees agree with this statement to the greatest extent; in total, the answers "strongly agree" and "rather agree" exceeded 60% of all answers in this group, with "strongly agree" exceeding 43%. In the case of current employees, the answers confirmed Statement 4 to a lesser extent. 50.3% of respondents from this group agreed with this statement, 35.5% did not have a formed opinion on this matter, and 14.2% were against it. The group with the highest level of uncertainty regarding the analyzed statement consisted of individuals not professionally associated with the mine; as many as 67.5% of the obtained answers were the "hard to say" option.

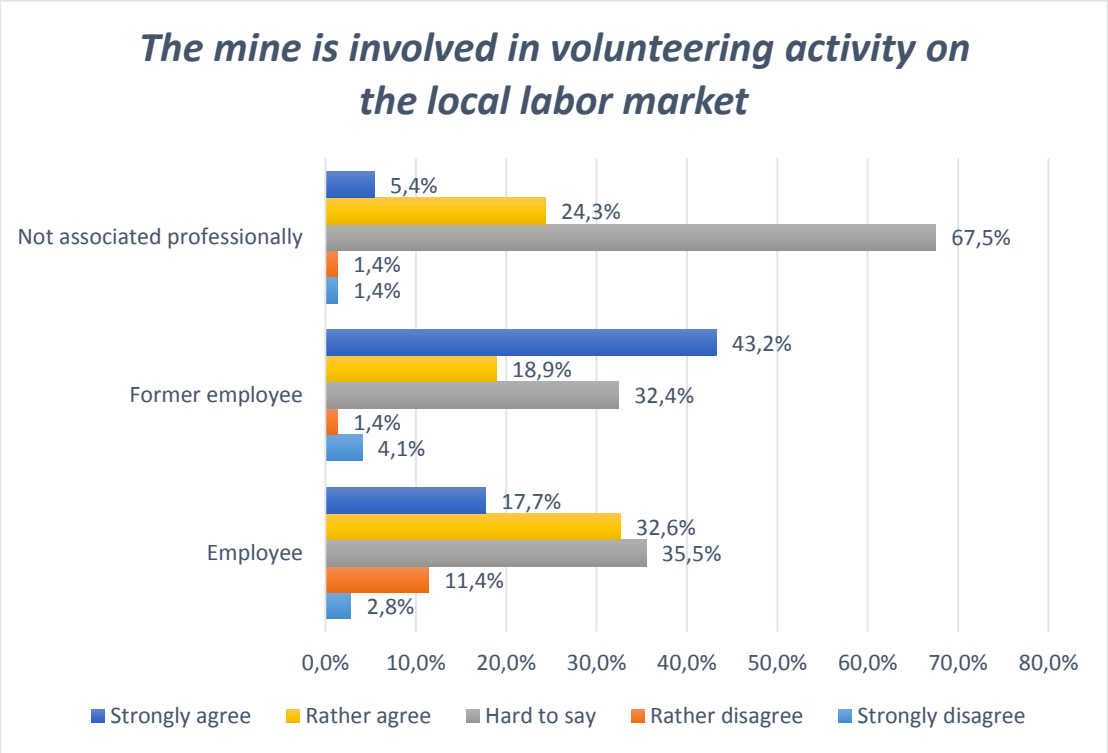

Figure 3. Assessment of the statement "the mine is involved in volunteering activity on the local labor market" according to the respondent's relationship with the organization (in %).

Source: own elaboration.

The analysis of the assessments of the statement "the mine is involved in volunteering activity on the local labor market" from the perspective of the respondents' gender also leads to very similar relationships as in the case of Statement 2 (Figure 2). Men agreed with it in over 53%, and 36% chose the "hard to say" answer (Figure 4). In the case of women, over 41% of the answers were approving of the discussed statement, while, what is worth emphasizing, as many as 52.3% of women did not take an unequivocal position for or against this statement.

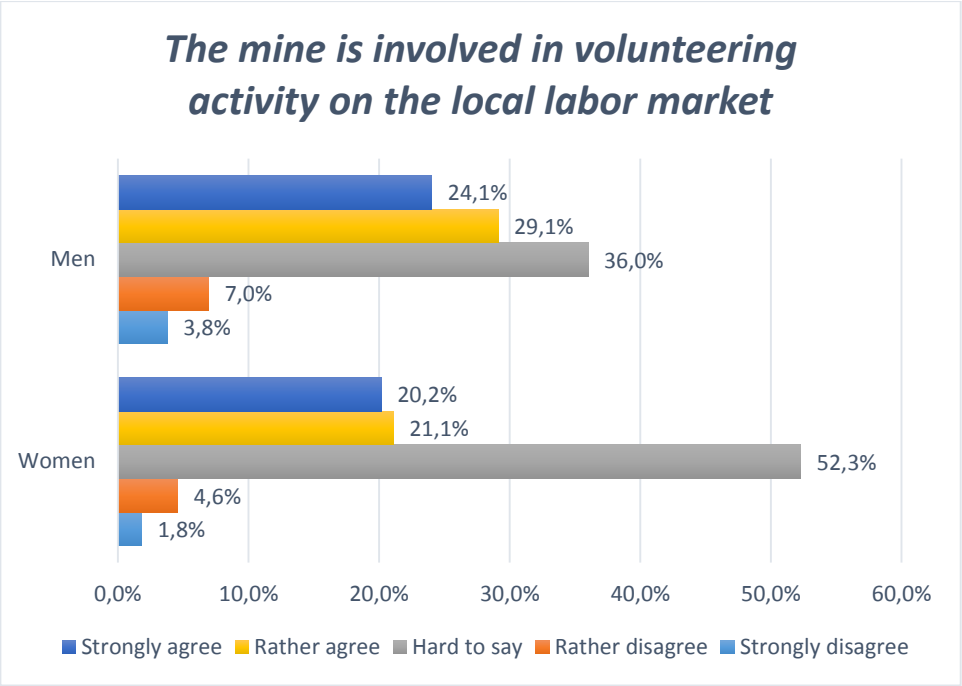

Figure 4. Assessment of the statement "the mine is involved in volunteering activity on the local labor market" according to gender (in %).

Source: own elaboration.

6. Discussion

The conducted research indicates that employee volunteering is an important, although not fully clearly perceived, element of the social activity of the studied organization. About half of the respondents confirmed that the mine provides employees with opportunities to engage in volunteering actions and that it is involved in volunteering activity on the local labor market. At the same time, the high proportion of "hard to say" responses (over 40%) indicates that some stakeholders have limited awareness of the initiatives being undertaken.

The analysis of the results according to the respondent's relationship with the organization reveals a clear differentiation in the perception of employee volunteering. The highest level of approval toward statements concerning both the provision of opportunities to engage in volunteering and the organization's involvement in actions on the local labor market was recorded among former employees. Current employees also largely rated the measures positively, though they were less likely to express strong approval, tending instead to choose moderate or neutral responses. The highest level of uncertainty was recorded among external stakeholders, where the "hard to say" answer dominated. This points to a limited visibility of voluntary activities within the local community and an insufficient level of communication outside the organisation.

Possible causes for the differentiation of assessments include varying levels of access to information, varying degrees of direct participation in actions, and varying strength of identification with the organization. In a practical dimension, this means the need to intensify external communication (e.g., through cooperation with local institutions, reporting of actions, presence in local media), strengthen participatory mechanisms among current employees, and maintain relationships with former employees as ambassadors of the organization's image. Such actions can increase the coherence of the perception of volunteering and strengthen its impact on the organization's image in the local environment.

The analysis of the results also indicates a clear differentiation in the assessments of volunteering depending on the gender of the respondents. In both analyzed statements, men expressed approval more often toward the statements concerning both the provision of opportunities to engage in volunteering by employees and the mine's involvement in volunteering activity on the local labor market. At the same time, women were much more likely to choose the answer “hard to say”.

This differentiation can be interpreted on several levels. Firstly, people may have different experiences of direct involvement in voluntary initiatives, which affects their perception of the accessibility and significance of such initiatives. Secondly, the differences may result from different expectations toward the organization in the scope of social responsibility. Women may adopt a more critical perspective in assessing pro-social actions, expecting their greater intensity, systematicity, or better communication.

The obtained results therefore indicate a need for in-depth qualitative analysis, which would allow for identifying the causes of perceptual differences. From the point of view of management, this means the necessity of taking into account the gender perspective in designing and communicating employee volunteering programs, so that they are perceived as accessible, transparent, and adequate to the expectations of all groups of employees and stakeholders.

In conclusion, it is worth pointing out further directions for research on the role of volunteering in shaping the social activity of an organization. These include:

- Analysis of the effectiveness of employee volunteering communication channels – in-depth research on how different forms of communication (internal and external) influence the level of awareness and perception of volunteering actions among different stakeholder groups,
- Conducting qualitative research on the determinants of volunteering perception – application of qualitative methods (e.g., in-depth interviews, focus groups) in order to identify the causes of assessment differentiation, in particular due to gender, professional status, and the level of engagement in the organization,
- Comparative cross-sector and cross-organizational analyses – extending research to other industries and types of organizations in order to determine whether the observed relationships are universal or specific to industrial enterprises strongly embedded locally.

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HUMAN-CENTRIC RHETORIC IN INDUSTRY 5.0: A CRITICAL METAPHOR ANALYSIS OF ACADEMIC DISCOURSE

Leszek PANASIEWICZ

Lublin University of Technology, Faculty of Management; l.panasiewicz@pollub.pl,
ORCID: 0000-0001-5836-6783

Purpose: The article assesses whether the declared human-centric orientation of Industry 5.0 constitutes a genuine programme of action or a set of rhetorical devices masking the technocratic legacy of Industry 4.0.
Methodology: A corpus of 17 peer-reviewed Polish-language academic articles published between 2023 and 2025 was examined using a two-stage linguistic metaphor analysis that combined the MIPVU protocol with Critical Metaphor Analysis (CMA).
Findings: The analysis revealed a systematic divergence between declared and actual human orientation — a pattern designated academic humanwashing.
Research limitations/implications: The conclusions are limited by the relatively small, monolingual corpus and the single-researcher design.
Practical implications: The findings will help practitioners and researchers engaged with the Industry 5.0 agenda to understand the problem of human-centric rhetoric.
Social implications: The proliferation of academic humanwashing legitimises existing workplace power relations and impedes substantive public debate on the social costs of automation.
Originality/Value: The article introduces the concept of academic humanwashing as an analytical category and is the first study of Polish-language Industry 5.0 academic discourse to apply the MIPVU+CMA methodology.
Keywords: Industry 5.0, humanwashing, metaphor, critical discourse analysis.
Category of the paper: Research paper.

1. Introduction

The article analyses one of the central premises of Industry 5.0 (I5.0): the human being and their well-being. The idea of augmenting workers' competences—rather than replacing them with advancing automation and systems integration—represents a new direction in a discourse previously dominated by process optimisation, automation, and cost reduction. The question is: how will this new quality be realised? What concrete solutions have been proposed?

How has the technocratic narrative, which treats labour as a cost driver, changed? Seventeen published, peer-reviewed, Polish-language articles on I5.0 were examined. Using the MIPVU and CMA metaphor-analysis protocols, the study analysed all references to workers and labour-related issues in these texts. Metaphor analysis identified the foundational assumptions and beliefs behind the authors' understanding of the human being's role and position in industry. In the context of I5.0, it revealed the current understanding of worker well-being. The results show scholars' views on the human being in I5.0. These scholars are the source of concepts, metaphors, and perspectives that may be disseminated through academic or popular-science publications, as well as lectures and discussions on scientific management.

2. Industry 5.0 and Industry 4.0

Industry 4.0 (I4.0) is the label for the fourth wave of the industrial revolution, which acquired its name and identity in Germany in 2011 (Shadravan, Parsaei, 2023, p. 2). This revolution unfolds in the context of the digital transformation of society, itself the result of the ubiquitous application of the Internet and other advanced technologies. A distinctive feature of this new production paradigm (Lee, Lee, 2018) is the integration of a broad spectrum of intelligent digital solutions, including (Grabowska, Saniuk, Gajdzik, 2022, p. 3119; Saniuk, Grabowska, Straka, 2022, p. 3; Ersoy, 2022, p. 20; Maddikunta et al., 2022, pp. 1, 3; Nahavandi, 2019, p. 2):

1. Cyber-Physical Systems (CPS): machines and devices that respond to their environment through embedded sensors.
2. Industrial Internet of Things (IIoT): sensors, machines, devices, products, and IT systems interconnected in a network enabling effective, real-time mutual communication.
3. Cloud computing and big data analytics: production data is transmitted to cloud platforms where advanced analytics and artificial intelligence support forecasting and optimization.
4. Advanced robotics and automation: stationary and flexible robots, often integrated with vision systems, coordinated via CPS/IIoT.

The focus on production goals — cost, time, and quality — together with a high degree of technological sophistication, has entailed a radical shift in the situation of employed persons. The literature identifies a range of worker-related problems characteristic of firms implementing I4.0 principles:

1. Digital skills gaps. The convergence of digital technologies in I4.0 exposed deficiencies in workers' digital competences (Pacheco, Iwaszczenko, 2024, p. 8). These gaps fuel anxiety about job loss (Saniuk, Grabowska, Straka, 2022).

2. Technological unemployment. Advances in automation and artificial intelligence have substantially increased the risk of technological unemployment resulting from the replacement of workers by autonomous machines (Saniuk, Grabowska, Straka, 2022).
3. Dehumanisation and marginalisation of workers. I4.0 implementation focused on technology, largely minimising and overlooking the importance of workers. Their role is frequently reduced to monitoring highly automated systems, while they exercise little influence over their design or implementation (Grosse et al., 2023, p. 7749).
4. Monotonous work, high demands, and low control. The content of many roles in I4.0 has become more monotonous. Workers perform highly specialised tasks characterised by limited decision-making latitude and high workloads (Grosse et al., 2023, p. 7750). Over-automation has created the risk of "phantom gains", in which expected benefits are offset by human-factor problems and poor performance (Trstenjak et al., 2025, p. 8).
5. Psychosocial risks. Rising stress, anxiety, burnout, and absenteeism result from the new demands posed by technology adoption, doubts about workers' capacity to master it, and perceived loss of autonomy (Grosse et al., 2023, pp. 7750, 7755).
6. Privacy loss and an atmosphere of distrust. There is resistance to pervasive monitoring and data collection (wearables, sensors), leading to feelings of excessive surveillance and distrust (Grosse et al., 2023, p. 7750; Peifer, Jeske, Hille, 2022, p. 1029).
7. Safety and trust in human–robot collaboration. Shortcomings in motion-control and position-tracking systems limit safe human–robot collaboration. Safety concerns and lack of trust impede the acceptance of robots and artificial intelligence (Pacheco, Iwaszczenko, 2024, pp. 6, 8; Dwivedi, Gupta, 2024, p. 686).

The concept of Industry 5.0 first appeared in a LinkedIn post (Vollmer, 2018). It arose as a response to the negative impact of I4.0 practices on workers' situation. The fundamental transformation of how humans, societies, and enterprises function — driven by the broad application of artificial intelligence and robotics — led to job losses and a sharp rise in the demand for digital skills. The core of the I5.0 idea, therefore, consisted of defining a new form of relationship between humans and intelligent machines. The literature identifies a range of characteristics of this concept:

1. I5.0 constitutes an extension and complement to I4.0, not a successive phase of industrial development. The primary vector of development and change is the re-centring of humanistic values — such as human well-being, social development, ethics, innovation, and sustainability — within industrial processes (Mourtzis, Angelopoulos, Panopoulos, 2022; European Commission, 2021).
2. Technologies central to I4.0 — AI, IoT, cyber-physical systems — remain the technological core of industry, but the orientation shifts towards social values and the central role of the human (Chander et al., 2022).

3. From a societal perspective, I5.0 is characterised by sustainability and resilience, understood as the ability of industrial systems to generate value despite disruptions, and to adapt and regenerate (Suciu et al., 2023).
4. An integrative model of the human–machine relationship, in which the human is responsible for decisions and creativity, and the machine for repetitive tasks. Accordingly, organisations cultivate a culture of innovation and provide worker autonomy and psychological safety (Gamberini, Pluchino, 2024).
5. Lifelong learning practices and interdisciplinary worker competences (She et al., 2022).

Three of these characteristics — human-centricity, sustainability, and resilience — are identified as the defining features, the three pillars of I5.0 (European Commission, 2021).

3. Humanwashing as an Analytical Category

A review of the literature leads to the conclusion that the I5.0 idea constitutes, above all, a response to the potential social hazards arising from the proliferation of the I4.0 paradigm. It enriches the technocratic optics of 4.0 with an element of values and social sensitivity. The question concerns the actual contribution of I5.0 to the development of the contemporary production paradigm. Does I5.0 genuinely offer original solutions regarding the role of the human in contemporary industry, or does it rather constitute an attempt at the rhetorical humanisation of the I4.0 paradigm? In the latter case, the I5.0 concept could be classified as an instrument of humanwashing. This term serves as an analogy to the popular concept of greenwashing — the practice of promoting environmentally friendly programmes in order to divert attention from the organisation's activities that negatively impact the environment (de Freitas Netto et al., 2020, p. 6). Similarly, humanwashing is defined as the use of AI-assisted machines in a misleading manner that causes stakeholders and the broader public to form unintended or deliberate misconceptions about the actual capabilities of such solutions (Scorici, Schultz, Seele, 2022). One function of humanwashing, analogously to greenwashing, is to mask the potentially dangerous or adverse consequences of the popularisation of AI-assisted machines. In the context of the present study, the masked adverse consequence is understood as a threat to workers' interests.

4. Research Aim, Method, and Procedure

The empirical aim of the study is to identify the hidden assumptions about the role of the human in the I5.0 concept as they appear in scholarly publications. Analysis of hidden assumptions will enable an assessment of the degree to which the human-centric orientation declared in texts devoted to I5.0 corresponds to practical solutions — whether it constitutes a genuine programme of action or a set of rhetorical devices serving to soften the technocratic legacy of I4.0.

The study was conducted through the analysis of linguistic metaphors in academic texts on I5.0, as this method allows examination of the hidden cognitive patterns guiding the process of scientific theory construction (Boxenbaum, Rouleau, 2011). The recognition of metaphors as a legitimate and significant component of scientific theories draws directly on cognitive metaphor theory (Lakoff, Johnson, 1980), which identifies metaphors as cognitive mechanisms structuring human thought and experience. In management science, this cognitive function is particularly significant because many organisational phenomena — such as strategy, culture, leadership, and change — are inherently abstract and require metaphorical conceptualisation to become cognitively accessible (Cornelissen, 2006).

Two principal metaphor-analysis protocols were employed: CMA and MIPVU. CMA analysis can uncover assumptions present in academic discourse of which the authors themselves may be unaware (Mullet, 2018, p. 21). It examines not only the metaphors present in discourse but also what is absent — missing metaphors and marginalised conceptualisations (Cornelissen et al., 2008). The MIPVU procedure provides clear criteria for determining the metaphoricity of linguistic expressions (Steen et al., 2010). The integration of both methods enabled the systematic identification of metaphorical expressions (MIPVU) and the simultaneous interpretation of their ideological functions (CMA) within the Critical Discourse Analysis framework (Fairclough, 1995).

Texts written in Polish were selected for analysis. Many arguments supporting this choice can be reduced to the following two:

1. The procedure for identifying metaphors — in both MIPVU and CMA — is anchored in a single language system. In the case of MIPVU, the requirement concerns embedding analysis in a single lexicographic system (Steen et al., 2010, p. 32); in the case of CMA, this requirement is a condition for the correct execution of collocation analysis and the pragmatic interpretation of metaphors (Charteris-Black, 2004).
2. When Polish authors write about “Industry 5.0” or “Economy 5.0”, they are not translating but recontextualising — in Fairclough’s (2006) sense — global discourse into a local institutional and cultural context. The formulations produced through this process will be cited in academic publications, find their way into university textbooks, curricula, popular-science publications, and the strategic documents of enterprises and

institutions, shaping the way Polish management theorists and practitioners internalise the process of the fifth industrial transformation: how they think about it and how they verbalise that mental reality.

The research procedure began by retrieving texts from the BazEkon, Biblioteka Nauki, and ResearchGate publication databases. Google was also used to search the repositories of economic universities, the Warsaw School of Economics (SGH), and Kozminski University, using targeted queries.

Texts included in the research corpus were required to meet the following criteria:

1. A peer-reviewed academic text of sufficient length to enable identification of metaphorical expressions in accordance with the MIPVU procedure.
2. A text prepared and published in Polish in a scholarly journal included in the list of ranked journals maintained by Poland's Ministry of Science and Higher Education (MEiN), or in a monograph published by an academic publisher appearing on the same list.
3. The text's subject matter explicitly refers to the Industry 5.0/Economy 5.0 concept or related paradigms (Society 5.0, Logistics 5.0).

Seventeen texts meeting the established criteria were found; they were published between 2023 and 2025.

A two-stage analytical procedure combining MIPVU with CMA was applied to all expressions referring to humans/people in the work situation occurring in the texts included in the research corpus. The analytical process was conducted by the author with the support of large language models (LLMs), treated as Computational Metaphor Identification (CMI) tools (Tian, Xu, Mao, 2024). The research was conducted in parallel by the LLM and the author, with results continuously compared and verified.

5. Metaphors of the Human in the Work Situation in Industry 5.0

The presentation of findings is divided into four thematic sections:

1. Terminology — analysis of the occurrence of I5.0-characteristic terminology in the texts.
2. Worker perspective — assessment of the presence of the worker's perspective through analysis of selected indicators.
3. The job elimination problem — analysis of the approaches to the problem of job elimination found in the examined texts, i.e., one of the key problems of the I4.0 paradigm.
4. Humanwashing — analysis of the frequency and examples of humanwashing rhetoric.

5.1. Terminology

Analysis revealed a high degree of conceptual consistency across the examined texts, as evidenced by the use of an established set of terms characteristic of I5.0.

Table 1.
Presence of key Industry 5.0 terminology in the research corpus

No.	Term	Number of texts
1.	"Industry 5.0" / "Przemysł 5.0"	15 of 17
2.	"Human-centric" / "Człowiek w centrum"	14 of 17
3.	"Worker well-being"	10 of 17
4.	"Human–machine synergy"	12 of 17
5.	"Sustainable development"	13 of 17
6.	"Resilience"	9 of 17
7.	Cobots / collaborative robots	8 of 17

Source: own elaboration.

The texts do indeed contain terminology appropriate to I5.0 declarations. The following sections analyse how those declarations are realised in practice.

Table 2.
Conceptual metaphors of the human in the work situation

No.	Conceptual metaphor (no. of articles)	Example expressions
1.	Resource (15 of 17)	"human resources", "human factor", "human capital", "scarce resource", "production resource", "HR staff", "skilled workforce as a success factor"
2.	Component of a machine/system (14 of 17)	"human factor", "human's role in the system", "element of the production process", "human as a node in a communication network (man-to-machine)", "mixed work teams (humans and robots)", "substitution of human labour" (in the latter variant — the worker as a replaceable component)
3.	Raw material to be shaped (8 of 17)	"shaping attitudes", "training staff", "aligning qualifications" (a mechanical metaphor: fitting parts), "building competences", "preparing graduates" (as an educational product)
4.	Barrier / source of resistance (8 of 17)	"resistance to change", "implementation barriers stemming from worker anxieties", "fear of technology as an obstacle", "technology acceptance as a condition of successful deployment", "building worker trust" (as a managerial challenge)
5.	Useful talent (7 of 17)	"talent management", "talent acquisition", "talent as a strategic resource", "talent shortage"
6.	User/actor (6 of 17)	"system user", "technology user", "actor in the work environment", "beneficiary of solutions", "entitled person" (in a healthcare context)
7.	Supervisor/operator (9 of 17)	"the human's role is limited to monitoring intelligent systems", "humans can control the process", "machine operators", "human as controller", "supervision of autonomous systems"
8.	Servant/element in service of technology (3 of 17)	"human factor in service of technology", "human liberated by automation" (implication: previously "in service" of the machine), "worker as beneficiary" (passive recipient of decisions)

Cont. table 2.

9.	Source of errors (4 of 17)	"human factor as a source of errors", "human errors to be eliminated", "automation of dangerous and repetitive tasks" (implying human fallibility), "greater error rates arising from fatigue"
10.	Deficient/imperfect construct (13 of 17)	"skills gap", "deficiencies requiring remediation", "shortage of talented workers", "deficit of aptitudes", "necessity of reskilling", "workers requiring retraining", "insufficient worker knowledge", "the ability to rapidly acquire new skills as an indispensable condition of functioning"

Source: own elaboration.

Noteworthy is the dominance of metaphors that treat humans in an objectifying, passive manner (items 1–7), thereby distinguishing them from a decisive, active subject. Some of the metaphors applied to humans carry negative valence (items 9 and 10), whereas only one type of metaphor (item 7) grants humans decision-making capacity.

5.2. Worker Perspective

The most striking finding is the complete absence of realisation of the human-centric pillar: none of the 14 texts (Table 1, item 2) declaring this orientation contains any substantive evidence of its implementation. None analyses the material conditions of work, none examines the impact of transformation on employment from the worker's perspective, and none incorporates the voice of workers. "Human-centric" functions in the corpus as an empty label, not as an indication of the direction of actual or even declared action. The contradiction between declaration and realisation in the human-centric domain is demonstrated by findings concerning two aspects of focus on labour-related issues.

Table 3.
Representation of the worker perspective

No.	Category	Number of texts
1.	Quotations from workers' statements	0 of 17
2.	Survey studies covering non-managerial employees	0 of 17
3.	Survey studies covering managerial staff	5 of 17
4.	Trade union positions	0 of 17
5.	References to conversations with workers, collective bargaining, or implementation agreements regarding I5.0	0 of 17

Source: own elaboration.

The respondents of the survey studies referenced in 5 of the 17 texts were managers and academics. The worker is absent from every publication. Systematic omissions of issues relevant to the worker's situation are also evident.

Table 4.
Presence of labour-related topics in the texts

No.	Topics related to the work situation	Number of texts
1.	Wages and other forms of material remuneration	0 of 17
2.	Trade unions, worker representation	0 of 17
3.	Working conditions (broadly understood)	3 of 17
4.	Employment security	1 of 17

Cont. Table 4.

5.	Workers' rights	0 of 17
6.	Pay inequalities (of any kind)	0 of 17

Source: own elaboration.

An issue as fundamental as remuneration is entirely absent. The declared concern for worker well-being and the centrality of the human is operationalised exclusively through immaterial values — "engagement" or "job satisfaction" — and in no case through the actual purchasing power or economic security of workers.

5.3. The Job Elimination Problem

A further characteristic of I4.0 — and, from the worker's perspective, a problem inherent to this paradigm — is the elimination of jobs as a consequence of far-reaching automation and AI deployment. Three ways of addressing this issue were identified in the analysed texts: silence, euphemism, and neutralisation.

Table 5.
Approaches to the job elimination problem

No.	Approach	Characteristics	Number of texts
1.	Silence	Complete disregard of the problem	7 of 17
2.	Euphemism	Describing the problem through euphemisms: "relieval", "support", "synergy"	6 of 17
3.	Neutralisation	Acknowledging the issue and then pointing to its positive consequences	4 of 17

Source: own elaboration.

1. Silence (7 of 17): Texts describe the deployment of robots, cobots, and AI systems while simultaneously declaring a "human-centric" orientation, yet do not raise the question of what will happen to workers whose positions become automated.
2. Euphemism (6 of 17): Texts employ terminology that formally acknowledges the change in the worker's role while concealing its direction. "Support" suggests complementarity rather than substitution. One text informs the reader about the prospect of "relief of the worker" through automation, while also noting the possibility of automating 30% of warehouse positions.
3. Neutralisation (4 of 17): After acknowledging that automation may eliminate jobs, the claim follows that "new jobs will be created". None of the texts employing this rhetoric provides data on the balance: how many positions will disappear, how many will emerge, of what nature the new roles will be, or what employment conditions they will offer.

5.4. Humanwashing

Discursive formations of a humanwashing character are present in every article examined. They consist of the co-presence within the text of pro-social declarations alongside the silencing, euphemisation, or neutralisation of the threats to workers posed by the technologies described. The following forms of humanwashing were observed:

1. Simple (7 of 17). The text includes a declaration of human-centric orientation, but the content is devoted to technologies and efficiency, while the consequences of advancing automation and AI deployment for workers are passed over in silence.
2. Defensive (3 of 17). The threat is acknowledged and then neutralised through the rhetoric of "new jobs" or through euphemisms — that is, a difficult topic is addressed and closed without substantive analysis.
3. Technocratic (1 of 17). The reduction in jobs resulting from automation and self-organisation is presented as a positive phenomenon.
4. Meta-humanwashing (1 of 17). A corporate perspective that foregrounds capital interests is presented as an objective account of "a stage of industrial development".

6. Conclusions

The analysis above points, above all, to the conceptual difficulty involved in identifying a genuine form of realisation of the human-centric idea. Practical solutions that would enable workers to occupy a central place in the dynamic structure of organisational processes — engaging their creativity, knowledge, and intuition while avoiding the threat of job loss or the compulsion to accept difficult compromises of adaptation to the demands of a new situation — remain a matter for the future. In the analysed texts, such solutions are absent.

To designate the clear rhetorical pattern visible in all the examined articles, the term academic humanwashing is proposed, understood as a systematic divergence between the human-centric orientation declared in academic texts and the actual treatment of the worker, measured by the presence of the worker's perspective, the consideration of threats to employment, and the representation of workers' interests. The systemic character of this approach is indicated by the following observations: the disproportion between declarations and the actual adoption of the worker's perspective; the complete absence of the perspectives of workers and worker organisations; the absence of any reference to wage issues; and silence, euphemisation, or neutralisation of the problem of job elimination resulting from automation and AI deployment. The worker appears in the texts as a "human resource" to be managed, a "talent" to be acquired, an "operator" to be trained, a "source of errors" to be eliminated, or a subject requiring "attitude formation".

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WORK ENGAGEMENT AND TURNOVER INTENTIONS: DOES TASK ABSORPTION MODIFY CLASSICAL RELATIONSHIPS?

Anna PAWŁOWSKA

University of Warsaw Faculty of Management; annap@wz.uw.edu.pl, ORCID: 0000-0001-8534-3317

Purpose: The study aims to verify classical relationships between employee engagement and turnover intention. Prior research highlights the retention role of supervisor support and career satisfaction, alongside their negative association with job insecurity. Under transactional conditions, employees may demonstrate high absorption—defined as task-focused engagement—without organizational attachment, potentially increasing turnover intention, including mobility driven by higher remuneration. This study examines the structural relationships among these variables and absorption as a dimension of engagement.
Methodology: The study was funded by the IDUB program at the University of Warsaw. Data were collected in December 2022 using a CAWI survey on a random sample representative of the Polish population (N = 1,069). The analytical sample was limited to full-time employees (N = 545). Statistical analyses included multiple regression and path modeling.
Findings: Only the relationship between career satisfaction and absorption was statistically significant. This aligns with the logic of transactional employment conditions, where task performance serves as the primary source of engagement conceptualized as absorption. However, the overall path model did not achieve satisfactory fit indices. The findings challenge established assumptions regarding relationships between job insecurity, supervisor support, career satisfaction, turnover intention, and engagement.
Research limitations: The use of self-report measures introduces potential common method bias and limits validity, particularly as the study examines turnover intentions rather than actual behavior. The cross-sectional design restricts causal inference and dynamic analysis.
Practical implications: The results suggest that HRM systems should develop adaptive strategies addressing ongoing employee turnover as a structural feature of contemporary labor markets, rather than relying solely on engagement-focused interventions.
Social implications: Findings indicate adaptive employee responses to transactional work conditions, potentially reducing social and economic costs associated with ineffective managerial practices.
Originality: Absorption remains an underexplored dimension of engagement. The study contributes by presenting results that do not confirm dominant theoretical assumptions, supporting the value of publishing non-confirmatory findings (e.g., AsPredicted).
Keywords: absorption, engagement, career satisfaction, HR, turnover intention.
Category of the paper: Research paper.

1. Introduction

Contemporary labor market research indicates a shift toward a transactional psychological contract (Rousseau, 1995; Conway et al., 2011). Organizations and employees appear to operate within a transitional phase between established relational norms and increasingly dominant transactional rules, shaped, among other factors, by technological and demographic changes (Guest, 2004; Cappelli, 1999).

Relatively rarely do the dynamics of these transformations generate substantial methodological implications for research in the fields of human resource management (HRM) and organizational behavior. Empirical analyses continue to rely predominantly on classical theoretical frameworks and diagnostic instruments, whose adequacy in capturing emerging phenomena may be limited (Rynes et al., 2002). This may, in turn, hinder the identification of new trends and patterns of employee behavior.

Prior studies have demonstrated that organizational engagement reduces turnover intention (Saks, 2006). However, persistently high levels of employee mobility suggest the presence of additional moderators of this relationship, while available evidence remains inconsistent. For instance, the Monster report (2024) indicates that 93% of respondents planned to change jobs in 2025. In contrast, data from CBOS show that 9.9% of adult Poles intend to change jobs in 2026, with 35% citing professional development as the primary reason.

The determinants of engagement identified in previous research largely remain within the sphere of organizational influence (Hom et al., 2017). Research models frequently assume a relational foundation of the employee–organization bond. This assumption, however, may weaken with the growing prevalence of the transactional psychological contract, in which exchange processes are primarily task- and reward-oriented (Rousseau, 1995; Guest, 2004). Within this framework, the degree of cognitive task absorption gains relevance (Schaufeli et al., 2006).

Consequently, the question arises regarding the role of engaging work tasks relative to classical retention predictors, such as supervisor support, career satisfaction, and perceived job insecurity (Saks, 2006; Ng et al., 2010). Of particular importance is whether task absorption may mediate the relationships between these variables and turnover intention (Twenge et al., 2010).

This issue may be especially salient for individuals characterized by high absorption rooted in professional rather than organizational loyalty (Świątek-Barylska, 2013; Lipka et al., 2012), who may demonstrate a propensity to leave irrespective of organizational factors traditionally associated with retention.

Accordingly, within the present approach, engagement was operationalized using the absorption dimension of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006), with the objective of simultaneously examining whether the relationships identified in prior

research would be replicated. Multiple regression analysis was conducted to assess the stability of predictive relationships and to evaluate the relative contribution of the independent variables. Subsequently, the study examined the effects of integrating variables traditionally associated with turnover intention within a single path model.

A path model incorporating job insecurity, supervisor support, and career satisfaction in relation to turnover intention was therefore tested, assuming mediation by absorption/engagement (Saks, 2006; Ng, Feldman, 2010). A distinction was made between general turnover propensity and transactional turnover propensity driven by higher remuneration. This analytical framework more accurately reflects employees' real-world organizational contexts, in which these factors co-occur.

The combination of these two analytical strategies enhances the interpretative validity of the findings and strengthens the robustness of inferences regarding the underlying mechanisms (Hom et al., 2017). Regression analysis enables the evaluation of the relative contribution of predictors to the observed effect, whereas path modeling facilitates the identification of structural interdependencies among variables.

The empirical contribution of the study stems from the relatively rare practice of examining turnover propensity simultaneously in its general and remuneration-driven forms, particularly in relation to task absorption (Schaufeli et al., 2006). The theoretical implications relate to the possibility that engagement, under conditions characterized by the predominance of a transactional psychological contract, may assume a distinct structural configuration. This perspective suggests the potential need for refinement of theoretical models and diagnostic instruments within organizational behavior and human resource management research (Rynes et al., 2002).

2. Job insecurity, supervisor support, and career satisfaction as determinants of employee turnover

In pursuit of the stated research objective, the study draws upon the Job Demands–Resources (JD–R) model, which posits that employee functioning is determined by the balance between job demands and available resources (Demerouti et al., 2001; Bakker et al., 2017). Consistent with this framework, job insecurity was conceptualized as a job demand, supervisor support as an organizational resource, and career satisfaction as a personal resource.

Job insecurity was operationalized as a unidimensional construct reflecting the subjective perception of a threat of job loss. The traditional distinction between quantitative and qualitative job insecurity (Greenhalgh, Rosenblatt, 1984) was deliberately not adopted, as such differentiation is more strongly tied to specific employment contexts (Hellgren et al., 2002).

Instead, the analysis focused on the affective component of general concerns regarding job continuity (Jiang, Lavaysse, 2018).

Supervisor support was operationalized in line with the Health and Safety Executive (HSE) framework, defining it as the perceived availability of instrumental and emotional assistance in performing work-related tasks (HSE, 2007). Within the JD–R perspective, supervisor support constitutes a relational resource that mitigates the adverse effects of job demands and facilitates employee retention (Bakker et al., 2017). Prior studies have consistently demonstrated negative associations between supervisor support and turnover intention (Akgunduz et al., 2018; Jung et al., 2023).

Career satisfaction is defined as a cognitive and subjective evaluation of one's career trajectory, goal attainment, and alignment with individual standards of success (Hofmans et al., 2008). Unlike job satisfaction, career satisfaction reflects a more longitudinal and dynamic perspective (Ng et al., 2014). Empirical evidence indicates that career satisfaction is negatively related to turnover intention (Ng et al., 2014).

Turnover propensity was examined from two complementary perspectives: a transactional orientation, referring to the willingness to change employers in response to higher remuneration, and a general intention to leave. This distinction follows from the assumptions of the transactional psychological contract, within which mobility decisions may be governed by distinct regulatory mechanisms (Rousseau, 1995; Guest, 2004). Supporting this rationale, recent labor market reports indicate that remuneration remains a dominant factor in job change decisions, with 81% of employees identifying salary as the primary driver (Randstad, as cited in PARP, 2026).

Within the proposed research framework, the study examines whether classical relationships between these determinants and turnover intention remain stable when analyzed simultaneously and when accounting for the mediating role of absorption/engagement.

3. The mediating role of absorption in turnover intention

The variables outlined above have been extensively linked to work engagement, whose relevance for turnover intention is well established (Hom et al., 2017). According to the JD–R model, engagement is enhanced by job resources and diminished under conditions of elevated demands and stressors, including job insecurity (Bakker et al., 2017).

However, prior conclusions regarding the retention-related function of engagement have largely relied on conceptualizations emphasizing the employee–organization relationship. Within this tradition, engagement has been defined either as a multidimensional state encompassing cognitive, emotional, and physical involvement in work roles (Kahn, 1990) or as a construct conceptually opposed to burnout (Maslach et al., 1997).

In the context of evolving labor market conditions, increasing attention has been devoted to distinguishing between organizational engagement and work engagement (Saks, 2006). This distinction aligns with contemporary trends such as boundaryless careers, workpreneurship, and market-oriented employment attitudes, which increasingly redefine the nature of employee–organization relationships (Rifkin, 2023). Empirical reports further suggest that a substantial proportion of employees prefer flexible, portfolio-based career paths over traditional linear advancement models (Randstad, as cited in PARP, 2026).

Accordingly, the present study operationalizes engagement using the absorption dimension of the Utrecht Work Engagement Scale (UWES), which captures a task-focused, motivational–cognitive form of engagement rather than an organization-centered orientation (Schaufeli et al., 2006).

Absorption refers to a state of deep concentration and immersion in work tasks, often accompanied by a diminished awareness of time and surroundings. The decision to focus exclusively on this dimension was guided by its conceptual alignment with transactional work orientations, wherein task execution assumes central importance. Such an approach enables a more precise examination of retention mechanisms under conditions characterized by weakened relational bonds with the organization.

Despite its theoretical relevance, absorption remains relatively underexplored as a mediating construct in turnover research. Consequently, the study seeks to determine whether absorption differentiates the mechanisms underlying transactional turnover propensity (e.g., remuneration-driven mobility) and general turnover intention.

Moreover, prior research has rarely addressed whether engagement serves exclusively as a retention factor or whether it may also heighten employees' sensitivity to perceived pay inequities (Singh, Loncar, 2010). This issue becomes increasingly salient considering growing transparency in compensation systems.

4. Hypotheses and the theoretical path model

Interpreting the preceding considerations through the lens of Conservation of Resources (COR) theory, employees are assumed to strive to protect and accumulate valued resources. Consequently, when individuals experience job insecurity, even highly absorbed or engaged employees may actively seek more favorable employment conditions. On this basis, a theoretical path model was developed (Figure 1). The research hypotheses, however, were formulated with reference to specific structural paths within the model.

H1. There is a relationship between job insecurity and absorption.

H2. There is a relationship between career satisfaction and absorption.

H3. There is a relationship between supervisor support and absorption.

H4. There is a relationship between absorption and general turnover propensity.

H5. There is a relationship between absorption and transactional turnover propensity, defined as the willingness to change employers in response to higher remuneration.

The hypotheses outlined above constitute the foundation of the theoretical model, which was empirically tested within the population of employees holding full-time employment contracts.

It is also noteworthy that, according to recent reports, only 22% of respondents do not intend to change jobs, including 42% of individuals aged over 55, compared with merely 8% among respondents aged 18-24 (Infor, 2026).

These observations provide grounds for anticipating that the mechanisms underlying the relationships among the analyzed variables may differ across age groups. Accordingly, Hypothesis 6 was formulated:

H6. There is a relationship between absorption and age.

The theoretical path model examined in this study assumes that there is a relationship between job insecurity, supervisor support, career satisfaction and turnover intention, conceptualized both as general and transactional turnover propensity, with absorption/ engagement specified as a mediating construct.

5. Research scheme

The study was funded by a microgrant awarded in 2022 under the Excellence Initiative – Research University (IDUB) program at the University of Warsaw. The project was carried out in substantive and methodological collaboration with P. Wójcik, PhD.

The dataset was derived from a survey study conducted by the external research agency ARIADNA using the CAWI method in December 2022. The initial random sample comprised N = 1,069 respondents and was representative of the Polish population aged 18-75 years with respect to age, gender, and place of residence. For analytical purposes, the sample was restricted to employees holding full-time employment contracts (N = 545).

The research instrument comprised three diagnostic scales demonstrating acceptable levels of internal consistency, as indicated by Cronbach's alpha coefficients. Responses were recorded using five-point Likert scales, except for the absorption/engagement measure, which employed a seven-point frequency scale ranging from 1 ("never") to 7 ("always/daily").

Absorption/engagement was assessed using six items derived from the absorption dimension of the Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2006), yielding a Cronbach's alpha of 0.85.

Career satisfaction was measured using a three-item scale (e.g., "I am satisfied with the extent to which I have achieved my career goals") (Hofmans et al., 2008), with a Cronbach's alpha of 0.80.

Supervisor support was measured using five items from the Health and Safety Executive (HSE) Management Standards Indicator Tool (HSE, 2007), including items such as "I receive support when performing emotionally demanding work", yielding a Cronbach's alpha of 0.85.

All scales exceeded the recommended reliability threshold of 0.70, supporting their suitability for path analysis (Konarski, 2009).

Job insecurity was measured using a single-item indicator, consistent with approaches focusing on the perceived global sense of insecurity rather than its multidimensional structure (De Witte, 2005; Sverke et al., 2002).

Turnover propensity was assessed using two single-item measures analyzed separately:

- General turnover propensity: "Do you intend to change your job/business activity within the next year?"
- Transactional turnover propensity: "If I received a job offer with higher remuneration, I would change my employer".

Descriptive statistics for all study variables are presented in Table 1.

Table 1.
Descriptive statistics for the scales and items used in the study

Variable	Descriptive Statistics		
	N	Mean	SD
Absorption/Engagement	545	4,43	1,15
Job Insecurity	545	2,76	1,03
Career Satisfaction	545	3,24	0,76
Supervisor Support	545	3,21	0,89
General Turnover Propensity	545	2,30	1,12
Transactional Turnover Propensity (Higher Remuneration)	545	3,69	0,95

Note: N = sample size; SD = standard deviation.

Source: Author's elaboration based on own data analyses.

6. Results

The formulated research hypotheses were tested using multiple regression analysis and path modeling implemented in Statistica (version 14). Table 2 presents the estimates of the multiple regression coefficients corresponding to Hypotheses 1-6.

Table 2.
Regression coefficients for the dependent variable: absorption/engagement

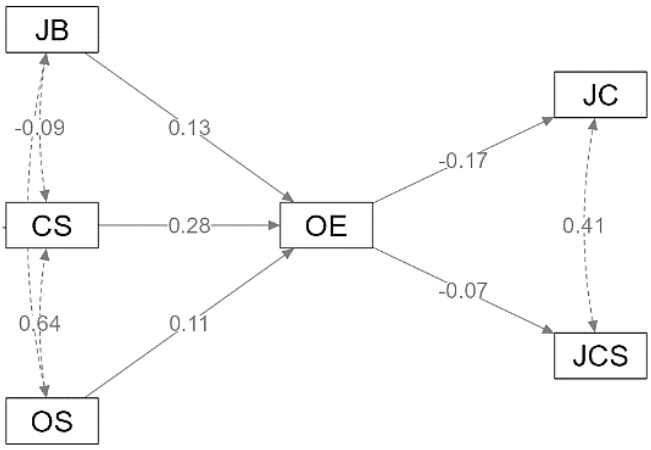
	Regression Analysis (Dependent Variable: Absorption) R = ,39; R2 = ,15; Adjusted R2 = ,14; F(6,538) = 16,36; p < 0,01						
	β	**Standard Error β**	**b**	**Standard Error b**	**T**	**p-value**	**N**
Constant			2,12	0,38	5,46	0,01	
OS	**0,11**	0,05	0,14	0,06	2,17	0,03	545
CS	**0,26**	0,05	0,39	0,07	4,99	0,01	545
JB	**0,14**	0,04	0,16	0,04	3,62	0,06	545
JCS	**0,02**	0,04	0,02	0,05	0,53	0,59	545
JC	**-0,10**	0,04	-0,10	0,04	-2,30	0,07	545
age	**0,065**	0,04	0,01	0,00	1,56	0,11	545

Note: β = standardized regression coefficient; b = unstandardized regression coefficient; SE = standard error; T = t-statistic; p = significance level, N = sample size; OE – absorption/engagement; OS – supervisor support; CS – career satisfaction; JB – job insecurity; JCS – transactional turnover propensity (higher remuneration); JC – general turnover propensity; age – respondents' age in years.

Source: Author's elaboration based on own data analyses.

The interpretation of the multiple regression results indicates that the majority of the coefficients are statistically non-significant. Statistically significant relationships were observed only for the associations between supervisor support (OS), career satisfaction (CS), and absorption/engagement (OE). Although the relationship between supervisor support (OS) and absorption (OE) reached statistical significance (Hypothesis 3), the regression coefficient was relatively small (0.11). Consequently, only Hypothesis 2 can be considered convincingly supported, whereas Hypotheses 1, 4, 5, and 6 were not confirmed.

In addition, a path model was tested to examine the relationships postulated in the literature among job insecurity, supervisor support, career satisfaction, turnover intention, and absorption/engagement as a mediating construct. Path analysis enables the assessment of structural interdependencies that may be difficult to capture using multiple regression techniques. Figure presents the path model, whose structure reflects the theoretically hypothesized relationships.



Note: OE – absorption/engagement; OS – supervisor support; CS – career satisfaction; JB – job insecurity; JCS – transactional turnover propensity (higher remuneration); JC – general turnover propensity.

Figure 1. Path model for the general analytical sample.

Source: Author's elaboration based on own data analyses.

The path model parameters were estimated using the maximum likelihood method. Table 3 reports selected model fit indices, specifically those considered less sensitive to large sample sizes. The reported values indicate that the tested path model demonstrates a low level of fit to the empirical data (Sagan, 2018).

Table 3.
Model fit indices

	Indices
	Value
Joreskog GFI	0,81
Joreskog AGFI	0,71
Bentler-Bonett Normed Fit Index	0,72
Bentler Comparative Fit Index	0,72
James-Mulaik-Brett Parsimonious Fit Index	0,33
Bollen's Delta	0,73

Source: Author's elaboration based on own data analyses.

The results presented in Table 3 indicate that the tested path model, incorporating all variables within a single analytical framework and capturing structural relationships beyond those examined through multiple regression analysis, did not demonstrate satisfactory fit indices (Sagan, 2018).

7. Conclusion

The regression analysis provided convincing support for only Hypothesis 2, confirming the association between career satisfaction and absorption. This finding is consistent with the logic of employee functioning under transactional norms, wherein task performance constitutes a primary source of engagement conceptualized as absorption, while such engagement does not necessarily exhibit retention-related effects.

However, the path model incorporating all variables within a single analytical framework, thereby more closely reflecting organizational realities, did not demonstrate satisfactory fit indices. These results provide grounds for questioning the classical relationships among job insecurity, supervisor support, career satisfaction, turnover intention, and engagement operationalized as absorption. The findings thus offer a point of departure for further refinement of structural models and research approaches. Notably, the observed pattern appears more consistent with challenges reported by HRM practitioners, who frequently contend with low engagement and high employee turnover (PARP, 2026).

The presentation of these findings also aligns with the methodological postulate emphasizing the scientific value of reporting results that do not confirm hypotheses derived from prior research, which increasingly constitutes a meaningful research contribution, as reflected in expectations regarding study preregistration (e.g., AsPredicted). In the present

case, these results are particularly relevant, as they extend prior research on employee–employer relationships within evolving labor market conditions.

Nevertheless, the reliance on self-report measures introduces limitations characteristic of this methodological approach (risk of common method bias), including potential biases associated with social desirability and reduced reliability of the findings (Podsakoff et al., 2003; Spector, 2006). Furthermore, analyses based on turnover intentions rather than actual mobility behavior may restrict predictive validity (Hom et al., 2017). This research design limits the ability to examine the dynamics of the process and draw conclusions about the direction of causality.

Future research should therefore prioritize qualitative and longitudinal designs capable of capturing trajectories of engagement, resource perceptions, and actual turnover behavior. Expanding the operationalization of engagement to include additional UWES dimensions (vigor and dedication) may provide a more comprehensive understanding of retention mechanisms. Moreover, incorporating contextual variables, such as pay transparency, perceived organizational justice, and the availability of alternative employment opportunities, may substantially enhance explanatory power (Singh, Loncar, 2010).

From a practical perspective, the findings suggest the importance of designing work environments that foster cognitive concentration, task autonomy, and perceived meaningfulness of work, particularly in relation to career satisfaction (Bakker et al., 2017). At the same time, the results indicate that increased task-focused engagement does not necessarily attenuate transactional mobility, especially under conditions characterized by strong economic incentives and growing pay transparency.

Strategically, these findings underscore the necessity of developing adaptive managerial practices that recognize high employee turnover as a structural characteristic of contemporary labor markets.

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DIGITAL TRANSFORMATION AS A DETERMINANT OF CHANGES IN PROJECT TEAM COMPETENCIES

Agnieszka PESZKO

AGH University of Krakow; apeszko@agh.edu.pl, ORCID: 0000-0002-8628-0036

Purpose: The aim of this paper is to identify the competencies required of project team members in the context of the ongoing digitalization of project management.
Design/methodology/approach: The study adopts an approach combining a literature review with empirical research. The theoretical part provides a review of current literature on digital transformation and competency changes in project management. The empirical part is based on a survey conducted among 104 respondents professionally involved in project management.
Findings: Digital transformation is reshaping the way projects are delivered, as evidenced by a significant increase in the use of digital tools, data analytics, and artificial intelligence. At the same time, the role of remote work and virtual project teams is growing. However, key project team competencies are not limited to digital and analytical skills. Competencies such as communication, collaboration, responsibility, adaptability, and problem-solving are gaining increasing importance.
Research limitations/implications: The main limitation of the study is the size and nature of the research sample (104 respondents), which restricts the generalizability of the findings. Future research will involve expanding the sample, enabling the application of statistical methods and a more in-depth analysis of the relationship between the level of digitalization and project team competencies.
Practical implications: The findings indicate the need to adapt training systems by integrating digital and analytical competencies with social and leadership competencies in the context of the growing importance of remote work and artificial intelligence.
Social implications: The results may support the development of educational policies and competency development programs aligned with the needs of the digital economy.
Originality/value: The study highlights the integrated nature of project team competencies, combining technological and social dimensions. It also identifies the paradox of the increasing importance of interpersonal and leadership competencies in the context of intensive digitalization and the dynamic development of artificial intelligence.
Keywords: Keywords: digital transformation, project management, project team competencies, artificial intelligence, virtual teams.
Category of the paper: Research paper.

1. Introduction

The dynamic environment, increasing project complexity, and ongoing digitalization necessitate the adoption of new approaches and tools to support effective project delivery. Digital transformation, encompassing the development of information technologies, data analytics, and artificial intelligence, is fundamentally reshaping management processes. Consequently, it becomes essential to identify the competencies required of project team members to ensure their effective functioning in the context of digital transformation.

The aim of this paper is to identify the competencies required of project team members in the context of the ongoing digitalization of project management. The study adopts an approach combining a literature review with empirical research. The theoretical part provides an overview of current publications on digital transformation, artificial intelligence, remote work, virtual project teams, and competency changes in project management. The empirical part presents the results of an original survey conducted among 104 respondents professionally involved in project management. Respondents shared their perspectives on changes observed in project work due to digitalization and the resulting shifts in required competencies. The findings provide valuable insights for both researchers and practitioners by identifying the competency needs of project teams in the context of digital transformation and the growing role of artificial intelligence.

2. Digitalization, AI, and competency changes in project teams – literature review

Ongoing digital transformation is one of the key factors shaping contemporary project management. The development of information and communication technologies, data analytics, and artificial intelligence is changing the way projects are planned, executed, and monitored (Adeniran et al., 2024; Lima et al., 2023). Digitalization facilitates the integration of data, tools, and processes within shared information environments, enhancing the transparency of project activities and supporting data-driven decision-making (Liu et al., 2024; Gorski et al., 2024). Artificial intelligence plays a particularly important role in the digitalization process. AI can support the automation of selected tasks, improve the analysis of project data, and serve as a tool for supporting risk and resource management (Savio, Ali, 2023; Pinzaru et al., 2025). At the same time, the effectiveness of AI-based solutions depends on organizational conditions, including technical readiness, the level of digital literacy, and organizational maturity, which determine the actual benefits of AI in project practice (Pinzaru et al., 2025; Marnewick, 2025). As a result, digital transformation goes beyond purely technical changes and requires

adaptations in management practices, decision-making processes, and learning mechanisms within project-based organizations (Lima et al., 2023).

The literature also highlights potential tensions and risks associated with digitalization. Increasing reliance on AI-enabled systems may strengthen technological dependence, posing a challenge to maintaining a balance between automation and the decision-making autonomy of project team members (Felcenloben, 2023). From this perspective, digitalization should be accompanied by the simultaneous development of both digital and social competencies to ensure that technology enhances team agency rather than undermines it (Bushuyev et al., 2024). The growing role of artificial intelligence should not marginalize the human role but rather transform it. AI should be seen as a tool that supports decision-making and analytical processes; however, its effective use requires competencies such as critical thinking, decision-making responsibility, and the ability to collaborate with technology (Adegbite et al., 2023; Pinzaru et al., 2025). In this context, the integration of technological, social, and cognitive competencies becomes essential (Rincon-Guio et al., 2023; Dani et al., 2025).

The development of digital technologies fosters the widespread adoption of remote work and the growth of virtual teams, affecting how projects are coordinated, communicated, and controlled (Teichert et al., 2024; Blak Bernat et al., 2023). A geographically dispersed environment requires the use of digital tools to enable collaboration and ensure the continuity of information flows; however, it also entails the risk of reduced communication quality and challenges in maintaining team cohesion (Blak Bernat et al., 2023). In such contexts, a clear division of roles and transparency of activities become particularly important, underscoring the need to deliberately establish collaboration rules in virtual environments (Wawak, 2024; Teichert et al., 2024; Peszko et al., 2025).

These changes in project execution lead to a redefinition of competency requirements for both project managers and project team members. The literature emphasizes the growing demand for digital and analytical competencies, including the ability to work with data, understand AI-enabled tools, and integrate digital solutions into project practice (Liu et al., 2024; Pinzaru et al., 2025). These competencies are essential for effective functioning in project environments characterized by the increasing importance of information and automation (Savio, Ali, 2023). However, digital transformation cannot be limited to the technological dimension alone; it must also reinforce the importance of social and leadership competencies. The role of leadership competencies in digital environments is particularly emphasized, including communication, supporting team adaptation, and shaping conditions conducive to collaboration in the context of technological change (Marnewick, 2025). From a managerial perspective, project success also depends on the ability to integrate technological, relational, and organizational dimensions, which is especially important in conditions of increasing complexity and stakeholder pressure (Al-Nimer et al., 2024).

The importance of social and communication competencies becomes particularly evident in teams operating in virtual environments. Research indicates that the effectiveness of remote and distributed work depends less on the digital tools employed and more on the quality of communication, collaboration, and trust within the team (Blak Bernat et al., 2023; Teichert et al., 2024). In this context, competencies related to organizing collaboration, accountability, and maintaining team cohesion under remote working conditions become critical (Wawak, 2024). The competencies of project managers and project teams associated with project success are primarily social in nature (e.g., communication, leadership, emotional intelligence) (Ochoa Pacheco et al., 2023; Stan et al., 2024). The literature also highlights the need to develop competency models that integrate the technological dimension with a human-centric approach, emphasizing the interaction between humans and technology and the design of organizational processes around human needs and capabilities (Dani et al., 2025, pp. 6-9). This perspective underscores the necessity of maintaining a balance between technological development and the role of humans in future projects.

Synthesizing the insights from the literature leads to the conclusion that digital transformation creates a dual competency challenge: on the one hand, it requires the development of digital and analytical competencies; on the other, it reinforces the importance of communication, collaboration, and leadership. This theoretical perspective provides the foundation for the objectives of the empirical study, aimed at identifying changes in the digitalization of project management and determining the competencies of project team members considered critical in the context of digital transformation.

3. Methodology of the study

The study was conducted using a Computer-Assisted Web Interviewing (CAWI) survey and took place from April to December 2025. The sample consisted of 104 postgraduate students enrolled in the “Project Management” programme at the Krakow School of Business (KSB), Cracow University of Economics. Most respondents had professional experience, with the largest groups having 10-20 years (40.4%) and 5-10 years (34.6%) of work experience. Shorter experience (up to 5 years) was reported by 16.3% of respondents. In terms of project experience, 38.5% of respondents had participated in 1-5 projects, 25% in 6-10 projects, and as many as 34.6% in more than 10 projects (including 22.1% in more than 15 projects). This indicates that a substantial proportion of the sample possessed practical project experience. The dominant mode of work among respondents was hybrid (46.2%), followed by on-site work (40.4%), while 13.5% of respondents worked fully remotely. This highlights the importance of flexible work arrangements within the studied group. The age structure shows that the majority of respondents

were aged 25-39 (74%), while 24% were aged 40–55. Women accounted for 59.6% of the sample and men for 40.4%.

The results are presented as a percentage distribution of respondents' answers. The main objective of the study was divided into two specific objectives:

Identifying changes in the digitalization of project management.

Determining the competencies of project team members in the context of digital transformation.

To address the first objective of the study, respondents were asked to identify and assess changes that have occurred over the past decade, as well as to forecast future changes in selected areas of project management (Table 1). In addition, respondents were asked to evaluate the impact of remote work on project management (Figure 1) and to identify the key aspects of effective remote work in project management (Figure 2). They were also asked about the anticipated role of artificial intelligence in the future of project management (Figure 3). To address the second objective, respondents were asked to indicate which project team competencies are considered important and which are not relevant in project practice (Tables 1 and 2).

4. Digitalization and project team competencies – analysis of the study results

The results presented in Table 1 indicate a clear continuation and intensification of trends related to the digitalization of project processes. Over the past decade, the highest importance was attributed to project process automation and the development of data analytics tools (both 78.8%), as well as the integration of digital tools and platforms (76.9%). Future projections suggest a further strengthening of these trends. Process automation and tool integration achieved the highest levels of expected importance (both 82.7%), while the development of data analytics tools reached 81.7%. This indicates that respondents anticipate a continued shift toward data-driven and integrated project management models. A notable increase is also observed in the perceived importance of artificial intelligence in decision-making and analytical processes. While 62.5% of respondents considered its role important in the past decade, this figure increases to 74.0% in future projections.

Project managers' competencies in managing distributed teams were rated comparatively lower in the past decade (47.1%), but their projected importance rises significantly (to 67.3%). This may indicate a growing awareness of the challenges associated with virtual teams. At the same time, the importance of social competencies among project team members remains consistently high (63.5% for the past decade and 66.3% in future projections), suggesting that despite technological advancements, competencies related to collaboration, communication,

and responsibility remain critical for project effectiveness. Interestingly, in the case of the increasing number of virtual project teams, the proportion of respondents expecting this trend to remain important in the future (57.7%) is lower than in the past decade (67.3%). This may suggest that respondents view the trend as already largely established rather than rapidly intensifying.

Table 1.
Assessment of the importance of changes in project management over the past decade and in future projections (n = 104)

Changes	The last decade in project management		The Future of Project Management	
	It was not important	It was important	It will not matter	It will matter
The role of artificial intelligence in project decision-making	14.4%	62.5%	4.8%	74.0%
Process automation in projects	1.9%	78.8%	4.8%	82.7%
Increased integration of tools and platforms	5.8%	76.9%	6.7%	82.7%
Development of data analytics tools	5.8%	78.8%	3.8%	81.7%
Increase in the number of virtual project teams	16.3%	67.3%	9.6%	57.7%
Project managers' competencies in managing distributed teams	20.2%	47.1%	7.7%	67.3%
Increasing importance of soft skills among project managers and team members	12.5%	63.5%	5.8%	66.3%

Source: own study.

Most respondents assess the impact of remote work on project management positively (Figure 1). Half of the respondents (50%) indicated that remote work has a positive impact on project management, while also posing challenges for project managers and teams. This suggests an awareness of the competency changes associated with remote work. Additionally, 19.2% of respondents believe that remote work enables greater flexibility and efficiency in project management. However, despite the predominantly positive assessment, a notable proportion of respondents expressed more critical views. For 9.6%, remote work makes no noticeable difference, while 13.5% indicated that it increases bureaucracy and complicates coordination.

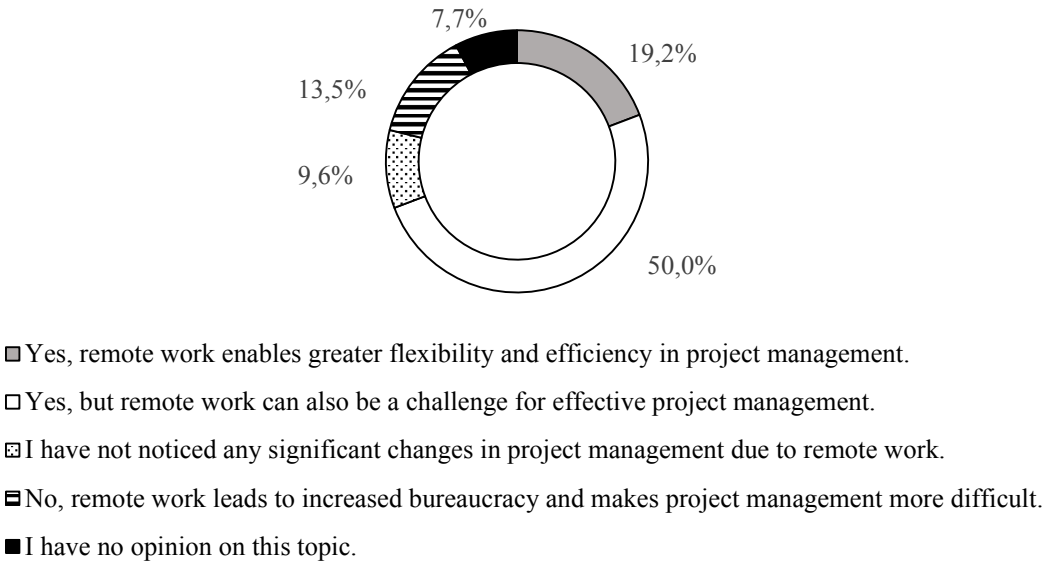


Figure 1. Assessment of the impact of remote work on project management (n = 104).
Source: own study.

Remote work is no longer perceived as a temporary solution but is becoming a permanent element of the project environment, requiring appropriate communication and organizational competencies. The analysis of responses presented in Figure 2 indicates that, according to respondents, the key factors for effective project management in remote work conditions are maintaining team motivation and engagement (40.4%) and effective communication within the team (35%). Far fewer respondents pointed to factors such as access to appropriate digital tools (10.6%), the ability to manage time and schedules (7.7%), and ensuring data security and IT infrastructure (5.8%). These results indicate that effective remote work depends not only on adequate technological infrastructure but also—perhaps more importantly—on social and organizational competencies, particularly in communication, autonomy, and time and task management in a digital environment.

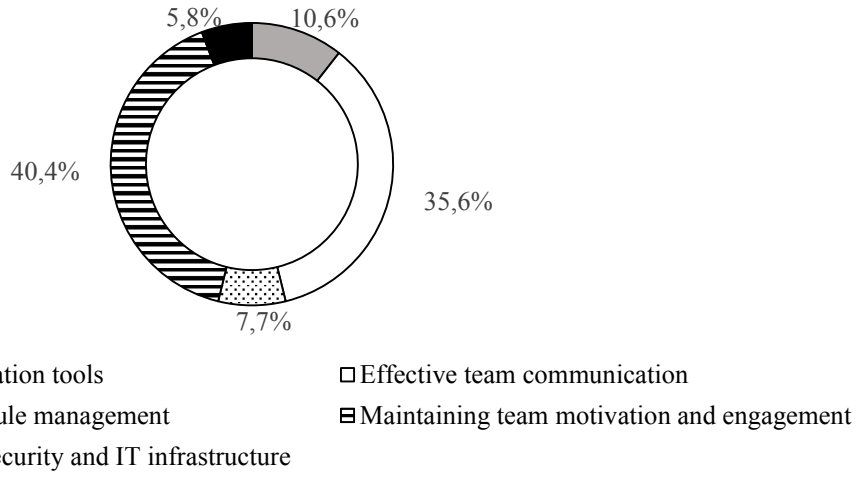
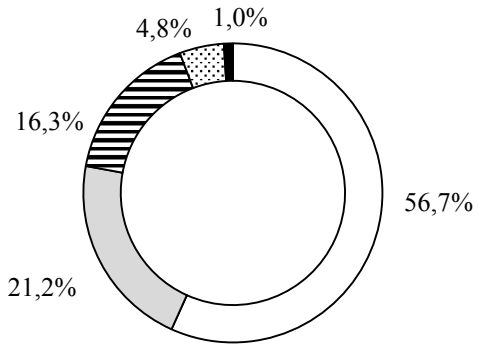


Figure 2. Key factors for effective project management in remote work conditions (n = 104).
Source: own study.

In response to the question regarding the role of artificial intelligence in project management (Figure 3), more than half of the respondents (56.7%) identified AI as a key factor in optimizing project processes in the future. This suggests a growing awareness of AI's potential in areas such as automation, data analysis, risk forecasting, and support for managerial decision-making. At the same time, 21.1% of respondents anticipate only a limited role for AI, which may reflect the view that this technology will support rather than replace traditional managerial competencies. Importantly, despite high expectations regarding AI (Table 1), the results also show a noticeable degree of uncertainty, with 16.3% of respondents unsure about AI's future impact. This uncertainty may stem from concerns about organizations' technological maturity, implementation costs, insufficient digital competencies, or doubts regarding the effectiveness of such solutions. Overall, artificial intelligence is perceived as an important direction of development; however, its future role remains uncertain.



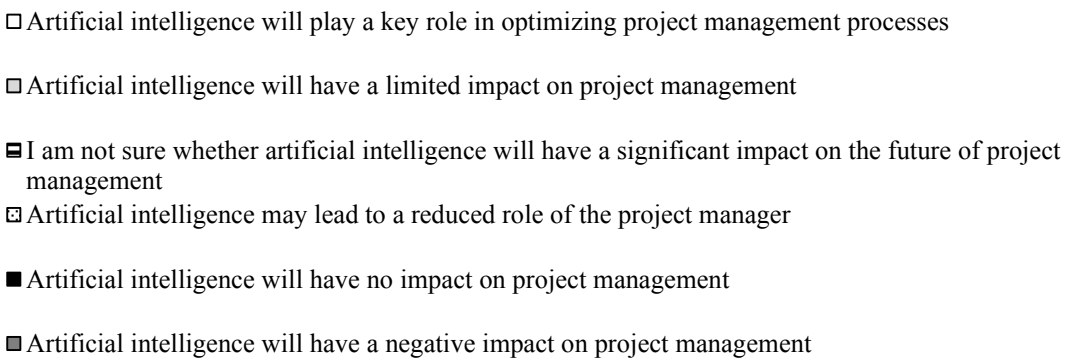


Figure 3. Perceived role of artificial intelligence in project management (n = 104).

Source: own study.

The results indicate that the growing role of digital tools and artificial intelligence is expected to have a significant impact on project effectiveness, which justifies the need to identify the competencies required of project team members in the context of digital transformation. The analysis of data presented in Table 2 shows that domain-specific competencies remain highly important in project work (75%). Technical competencies, such as familiarity with modern project management tools and technologies, received lower (though still substantial) ratings (62.5%).

However, respondents ranked social and adaptive competencies the highest. Responsibility for assigned tasks emerged as the most critical factor (90.4%), followed by teamwork (84.6%), communication with internal and external stakeholders (83.7%), and problem-solving skills (83.7%). Respondents also prioritized the ability to respond quickly to change and decision-making flexibility (78.8%), autonomy (76.0%), and stress resilience (75.0%).

Table 2.
Perceived importance of project team competencies (n = 104)

Competencies	Not important	Important
Domain-specific qualifications	6,7%	75,0%
Project work experience	13,5%	53,8%
Narrow specialization	15,4%	42,3%
Ability to work in a team	0,0%	84,6%
Stress resistance	4,8%	75,0%
Responsibility for assigned tasks	1,0%	90,4%
Problem-solving skills	1,9%	83,7%
Ability to communicate with the project manager	1,9%	79,8%
Creativity	9,6%	66,3%
Autonomy	6,7%	76,0%
Communication within the team and with external stakeholders (including clients)	1,0%	83,7%
Knowledge of modern project management tools and technologies	15,4%	62,5%
Ability to work in intercultural and global teams	12,5%	66,3%
Advanced communication and negotiation skills	6,7%	53,8%
Ability to respond quickly to change and decision-making flexibility	3,8%	78,8%

Source: own study.

Narrow specialization (42.3%) and project work experience (53.8%) received the lowest ratings, suggesting that general competencies are gaining importance at the expense of highly specialized knowledge. This may suggest that, in the context of digital transformation, greater value is assigned to broad, transferable competencies rather than narrowly specialized knowledge.

The results indicate that, despite the growing role of digital tools and artificial intelligence, social, communication, and adaptive competencies remain critical for project effectiveness. While the future of project management is perceived as increasingly data-driven and automated, project success will continue to depend on the quality of communication, leadership, and collaboration in distributed teams.

5. Conclusion

The aim of this paper was to identify the competencies required of project team members in the context of the ongoing digitalization of project management. This objective was achieved by identifying key changes in project management digitalization and determining the competencies considered critical in the context of digital transformation.

Project management is undergoing significant and systemic transformations driven by the development of digital technologies. Both the literature review and the empirical findings indicate that digital transformation encompasses the development of integrated digital platforms, the automation of project processes, the increasing importance of data analytics, and the use of artificial intelligence in decision-making. The results of the present study are consistent with these trends, with respondents identifying automation, tool integration, and the development of data analytics and AI as key directions of change, both over the past decade and in future projections.

At the same time, the findings highlight the growing importance of remote work and virtual project teams as a permanent element of the project environment. While this phenomenon enhances organizational flexibility and access to a global talent pool, it also introduces new challenges related to communication, coordination in distributed teams, and the development of trust and effective knowledge sharing. Digital transformation thus affects not only tools and technologies but also the structure of work and collaboration models in projects.

Although digital transformation is largely driven by technological advancements, the results indicate that social competencies and team responsibility remain critical determinants of project effectiveness. Both the literature and empirical findings emphasize the importance of social and adaptive competencies, including responsibility, teamwork, communication, problem-solving, and decision-making flexibility. While technical and digital competencies remain essential, their effective application depends on well-developed social and leadership competencies.

The findings indicate that the effectiveness of project teams in the context of digitalization depends not only on the level of technological advancement but primarily on the quality of relationships, communication, adaptability, and leadership and decision-making competencies. The growing importance of remote work and virtual teams contributes to the globalization of the labor market, while simultaneously requiring the development of communication, social, and intercultural competencies.

This highlights a key paradox of digital transformation: the greater the importance of technology, data, and artificial intelligence in project management, the more strongly the role of interpersonal and communication competencies is emphasized. The development of digital tools does not diminish the role of the human factor in projects; rather, it increases the demand for communication, leadership, responsibility, and collaboration, which are essential for the effective use of technology in project practice.

The results contribute to the development of knowledge on the future of project management and the competencies of project teams in the context of digital transformation. They point to the need for an integrated approach to competency development, involving the parallel strengthening of technological, analytical, and digital competencies, alongside social, adaptive, and decision-making competencies. Such an approach enables the full utilization of the potential of new technologies while preserving the central role of the human factor in project management.

A limitation of this study is the sample size (104 respondents), which restricts the generalizability of the findings. An additional limitation is the nature of the sample, consisting of postgraduate students in project management, which may influence the structure of respondents' professional experience. Nevertheless, the study provides a basis for further research on the relationship between the level of project management digitalization and the structure of project team competencies.

Future research should involve expanding the sample size, enabling the application of statistical methods and a more in-depth examination of the relationship between the level of digitalization and the competencies required of project teams. A promising direction for further research would also be a comparative analysis of project team competencies across different industries and organizations with varying levels of digital maturity.

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SELECTED ELEMENTS OF CRISIS COMMUNICATION

Grzegorz PIETREK

Siedlce University; grzegorz.pietrek@uws.edu.pl, ORCID: 0000-0003-2660-8025

Purpose: to highlight the importance of contact with the media and those affected in crisis situations. Furthermore, the aim is also to demonstrate that effective communication with the media in a crisis situation is essential, if only because the media are the fastest and most effective channel for reaching a message to a wide audience.
Design/methodology/approach: To achieve the objective outlined above, several theoretical methods were employed, primarily literature review, comparison, abstraction, synthesis, induction, deduction and inference.
Findings: Social media is becoming an increasingly popular communication platform; however, it is traditional media that is expected to provide reliable information in emergency situations. Communication management within an organisation consists of closely interlinked and interdependent processes. On the one hand, effective communication enables the proper dissemination and exchange of information and knowledge; on the other hand, effective communication is determined by the level of development and the type of organisational culture, as well as the individual approach and the attitude of individual people towards it.
Practical implications: Recognising these relationships and interdependencies, and then properly addressing these related aspects of management—including, in particular, the correct communication process in crisis situations—is an extremely important task, and indeed a challenge for contemporary science and practice.
Originality/value: The text is original, and the conclusions can be developed and used to creatively continue good practices within organisations.
Keywords: crisis situations, crisis management, crisis communication.
Category of the paper: conceptual article; general review.

1. Introduction

An organisation may find itself in a crisis situation, or it may provoke a crisis itself either unintentionally or intentionally (e.g. deliberate violation of the law or ethical principles). The dynamics of social media and the online environment mean that the course of a crisis may be less predictable, and the audience more emotionally involved, which makes it difficult for the organisation to take appropriate action. Applying an appropriate strategy is difficult because

crisis situations are not always easy to categorise based on their typology (Kaczmarek-Śliwińska, 2019). An image crisis may develop into a media crisis, i.e. public exposure through the media. When a crisis situation arises, regardless of whether it concerns the private or public sector, a phenomenon of a permanent lack of information emerges (Grzegorczyk, Kościańczuk, 2012). Therefore, the main task of a company or public administration staff is to provide communications that would either improve the public image of the organisation (public relations) or the product (marketing), or reduce the scale of the incident, thereby protecting both the health and lives of citizens (crisis management).

Every crisis management operation involves issues of great public importance. This carries the risk of very negative consequences, which attracts widespread public interest. One of the defining features – which also fuels curiosity and the need for rapid access to information – is the suddenness of the crisis, as it is difficult to predict. By the time an organisation realises what has happened, many negative consequences may already have arisen. A lack of information – as well as the impression of an ineffective response from the emergency services, caused by limited resources – creates significant social tension. The possibility of a direct threat affects both the organisation and its surroundings. Attempts to bring the situation under control, coupled with heightened emotions among those directly or indirectly involved, may cause tensions that affect the effectiveness of actions. Problems in finding common ground can lead to increased spontaneity in actions, which will lack a comprehensive approach.

The weakest link in crisis management is the public, customers and the external environment, as their behaviour is difficult to predict. In extreme cases, this behaviour may escalate into aggression towards those intervening. During a crisis, each party involved attempts to find someone to blame (Grzegorczyk, Kościańczuk).

Communication within an organisation plays a consistently and invariably significant role in organisational management, but above all in achieving safety objectives. Crisis situations heighten the importance of the process of creating and disseminating information, giving it particular significance; moreover, the manner in which communication is conducted directly translates into the best and most effective resolution of a specific crisis. One element of crisis management is the organisation taking action to minimise the negative effects of the crisis. This is possible provided that the organisation has in place mechanisms for managing information and an efficient communication system are in place within the organisation, so that accurate and as complete as possible information reaches the public as quickly as possible, using all available technical means.

2. Results

At this point, it is important to highlight the key **methodological aspects**. Communication in crisis situations refers to both internal and external communication. Internal communication concerns the flow of information within an institution; external communication involves communicating with the external environment. Both types of communication are conducted with the aim of preventing or limiting the development of a crisis situation, responding to and managing it, minimising its negative effects, and restoring the situation to its pre-crisis state. Crisis communication takes place on two levels:

a) The information level – this is a key level in crisis management, involving the collection, analysis and dissemination of information during a crisis.
b) The level of meaning – this encompasses the symbolic level and determines the impact of messages on the perception and interpretation of the crisis, as well as the image of the institution during a crisis (Coombs, 2014).

Crisis communication, or more precisely its objectives and functions, can be based on the four phases of crisis management, namely:

Prevention phase – this involves *risk communication*, i.e. communicating about a predicted threat, its severity and potential negative consequences, or instructing people on specific behaviour. These are therefore all actions taken to prevent a crisis situation from arising, including actions in the area of law-making and law enforcement.

Preparation phase – this involves planning and organisational activities designed to prepare for the occurrence of a crisis. In this phase, the key tasks are and assessment of the threat, and information is circulated within a closed loop, meaning that messages from external units are channelled to the crisis management team, where they are processed in accordance with crisis management plans appropriate to the given level via internal communication channels. Information conveyed in the form of monitoring, reports or bulletins is analysed, and operational procedures are determined on this basis to carry out the necessary actions. At this stage, a spokesperson or another person authorised to issue statements should be appointed (Marszałek, Sobolewski, Majchrzak, 2013). The actions undertaken and implemented in this phase are more effective when preceded by effective measures taken in the prevention phase, e.g. comprehensive public education, raising awareness about existing threats and appropriate behaviour during a crisis, and the strengthening of preventive measures (Pieczywok, 2014).

The response phase – encompasses actions taken at the onset of an incident, aimed at providing assistance to those affected and minimising losses. The initial phase of a crisis is characterised by chaos, uncertainty and significant media attention. Information is usually incomplete and may even come from unreliable sources. Overload of ICT systems can contribute to communication chaos. Hence, key actions will include gathering and verifying

information and messages, coordinating activities with other response teams and services, and providing the public with clear and factual messages. An information point or helpline is also organised to advise on how to proceed in the current situation, how to obtain assistance, and what actions will follow once the crisis has subsided (*Crisis Communication Handbook. Fundamentals of Information Management in a Crisis*, 2017).

Recovery phase – during this phase, measures are taken to restore the situation to its pre-crisis state. The public expects support, including emotional support; therefore, understanding and compassion must be shown to those affected by disasters. Psychological support is particularly important in this phase.

It can be summarised that crisis communication directed at the public serves mainly an informational and educational function, aimed at protecting the population from the effects of the crisis. Communication at an emotional level naturally plays an important role, e.g. reassuring a confused community and expressing sympathy.

Risk can be defined as a concept comprising both objective factors, such as mortality, and subjective ones, such as human emotions. Risk communication should take both sets of factors into account. This can be illustrated by the example that, for instance, what sometimes causes anxiety and fear in society appears, according to experts, to be harmless. An illustration of this is the situation where most nuclear power plant accidents are assessed by specialists as posing no threat to human life or health; nevertheless, news of such an incident sparks rumours that can easily escalate into panic (*The Book of Crisis Communication 2024. Theory and Practice,* 2024). On the other hand, there are situations where experts try to alert the public, who nevertheless downplay the threat. The public therefore perceives threats subjectively; for example, people fear a terrorist attack, whereas most accidents occur at home. This state of affairs is due to the fact that experts and the public perceive and assess threats according to different criteria: specialists analyse the death toll resulting from a disaster, whilst people assess the threat based on the following factors:

- voluntariness: risks taken voluntarily are more acceptable to people than risks they are forced to take,
- source: people are more inclined to accept the consequences of natural disasters than human error, e.g. government mistakes,
- memory: an event that is firmly etched in the memory makes the risk easier to imagine; for example, we remember media reports of air disasters, which gives rise to a fairly widespread fear of flying,
- fear: emotions shape attitudes towards risk; for example, people are more afraid of contaminated water than air, even though there are more pollutants in the air,
- control: people tend to behave in a riskier manner in situations they can control, e.g. a driver reacts differently to high speeds than a passenger,
- duration: people regard the risk of a sudden disaster more seriously than the long-term effects of a particular threat, e.g. the effects of smoking,

- diffusion in time and space: society fears events threatening its immediate surroundings in the near future more than a distant disaster in a remote corner of the world that results in numerous casualties,
- familiarity with the threat: people underestimate threats they are familiar with; for example, they do not consider driving a car to be a significant threat, whereas flying in an aeroplane causes anxiety,
- moral judgement: the distinction between threats that are morally insignificant and those that are morally significant (e.g. the evolution of perceptions of racial discrimination over the years) (Sasińska-Klas, 2016).

Risk communication is hampered by a number of factors linked with the perception of risk, namely:

- people tend to deny or dismiss the actual risk,
- many people do not take the existing risk seriously enough,
- when deciding how to respond to a threat, people take too many factors into account,
- many people are unable to understand the complexity of the situation or the message about the threat,
- the threat may seem too diffuse, abstract or inevitable,
- the community affected by the threat may be overly diverse, e.g. in terms of access to or trust in the media,
- informal social and personal networks sometimes downplay or sideline formal and official messages about threats,
- messages regarding the crisis may reach the community too late,
- messages may be conveyed to a community awaiting essential information via an inappropriate medium, which is not received by the community or, for various reasons, does not reach it (Sasińska-Klas, 2016).

Based on the above, it can be concluded that the effectiveness of communicating about threats depends on a number of factors. Media coverage plays a significant role in risk communication. The mass media tend to report about events with tragic consequences, often exaggerating the coverage whilst ignoring potential or creeping threats (Olejnik, 2017). Information conveyed in this way influences the audience, who ignore some threats whilst fearing others, exaggerated by the media, which in fact rarely occur in their environment.

From a **practical point** of view, it can be said that risk communication encompasses two types of activities:

- activities aimed at alerting the public, highlighting the reality of a threat, and carrying out preventive and educational measures to encourage appropriate behaviour, e.g. public campaigns promoting vaccination against infectious diseases or evacuation in the face of an imminent threat.

- reassuring the public and calming emotions – communicating information about crisis situations through the media helps to raise public awareness of the risks. The distribution of materials in the form of leaflets, brochures and promotional items is also a key element of communication with the public. *Printed* information materials should not be underestimated, as in the age of the information society, when an event disrupts the reception of media coverage, it is precisely these printed materials that remain the primary source of knowledge. In order to reinforce the message regarding risks and threats, it should be conveyed through a variety of channels and sources. Local media play a particular role in this, as they are perceived as a reliable source of information (Sasińska-Klas, 2016).

As a general observation, one might note the obvious fact that contact with the media in a crisis situation is essential, if only because the media are the fastest and most effective channel for reaching a wide audience with a message. Although social media platforms, such as Facebook or 'X', are becoming an increasingly popular form of communication, traditional media are still expected to provide reliable information in emergency situations. The following functions arise from this relationship:

- **informational** – the media convey information based on the audience's needs to ensure appropriate behaviour in emergency situations. An event not reported by the media does not exist in the public consciousness, and the media's informational function is closely linked to changes in public attitudes. Society expects the media to provide reliable information, particularly during a crisis, when information plays a vital role. Alerts and announcements broadcast by the media also fulfil this informational function. (Wiśnicki, 2018).
- **opinion-forming** – the media shape public opinion in various areas of life. The mass media play a huge role in shaping public opinion and people's behaviour. A message that reaches the audience via the media not only shapes their worldview but also influences their perception of the world. Thus, the mass media raise public awareness of creeping threats. On the other hand, the media may exaggerate certain events that do not directly threaten a given community; for example, fear of rising crime is linked to the frequency of watching news and television programmes, although the actual level of safety in Poland is satisfactory. The opinion-forming role of the media stems from the fact that audiences do not question the message conveyed by the media, but accept it as true. Crucially, it is the media that decide which information will be conveyed and which ignored, thereby directing the audience's attention to a specific issue and its narrative (Andersen, Taylor, 2008).
- **correlative** – the media interpret the motives behind actions taken by institutions, explain problems and justify decisions made, enabling an understanding of the symbolism of events, an understanding of the modern world, knowledge of the laws

governing institutions and their functioning, and the mechanisms at play; they facilitate socialisation, promote established values and norms, and support specific authorities.

- **educational** – the mass media produce and broadcast educational programmes, creating educational value by building a society of knowledge and skills. In particular, the media play a key role in delivering educational content to a wide audience, enhancing learning abilities, and improving professional and life skills, including in the field of safety (McQuail, 2007).
- **mobilisation** – the media mobilise society to take action, support preparedness in emergency situations, as well as political engagement. The media also stimulate social action, particularly in the spheres of politics and economic development (McQuail, 2007).
- **monitoring** – the media publicise the actions of political elites and other actors in social life, particularly those that are inconsistent with their declarations or break the law. Therefore, the media act on behalf of citizens, strengthening their position as a force to be reckoned with. By performing a watchdog function, the media help to raise awareness of unethical activities by political actors and those in power, which could hinder crisis management. Information gathered in this way can be used even long after an incident has occurred to improve and restructure future civil protection measures.
- **entertainment** – they offer audiences entertainment content that allows for relaxation and a break from problems (McQuail, 2007).

3. Discussion

The media undoubtedly support the functioning of organisations; however, media coverage of events and the activities of journalists can have negative consequences, such as:

- the media can be a source of widespread information chaos; this is particularly true of social media platforms, which are characterised by an excess and inconsistency of information;
- media coverage may not be accurate, and information may be exaggerated. News outlets may highlight a single isolated incident, suggesting that the situation is widespread. During emergencies, such cases most often involve spreading panic, looting and other forms of crime or deviant behaviour;
- the media contribute to the politicisation of emergency situations, as they exert pressure on decision-makers and public administration, which may result in hasty and chaotic actions that should be determined with caution. Politicians, on the other hand, may exploit media interest to promote their own political agendas. Consequently,

such reporting leads to the polarisation of public opinion and a search for those to blame for the damage caused by the event;

- journalists focus on sensational news, as this sells better. Photographs may be deliberately framed to show destruction, and the image presented may not be entirely objective;
- the sudden arrival of large numbers of journalists at the scene of an incident can pose not only a logistical challenge and cause additional damage due to so many people being in one place, but also lead to a lack of respect for privacy and disrupt or hinder the work of emergency services;
- the work of emergency services is more stressful when their every move is recorded and commented on in the public sphere, and their decisions are questioned. The media also frequently broadcast interviews with critics of the actions taken by the services or the administration;
- by showing frequent broadcasts, for example, of disasters and natural catastrophes occurring around the world, the public may become less interested in global issues due to the perceived tragedy of the events and their own sense of helplessness. In this way, media coverage has a negative impact on public altruism (McQuail, 2007).

Social media can be considered separately, as it can sometimes have a negative impact on crisis situations in the broadest sense. Despite the numerous benefits of using social media in emergency situations, there are, however, a significant number of problems associated with its use. During serious incidents, there is a lack of up-to-date and reliable information; many posts or *tweets* are published, but they are usually chaotic, redundant, inconsistent and unreliable. Consequently, the reliability of information can be problematic due to false rumours or misinformation. It is argued that the volume *of* so-called *'fake news'* is limited by the users themselves, who react promptly to false information and correct obvious distortions. In this context, *retweets* serve as a mechanism for assessing the validity of information. Furthermore, the collective intelligence of the audience serves to correct false messages, as they themselves take great care to ensure the reliability of sources (Nowicka, 2023).

Publishing a large number of posts on a crisis situation may, on the one hand, lead to information chaos and the aforementioned problem of disinformation and the spread of fake news, but on the other hand, it can serve as a source of information on current operations and the measures taken by the emergency services. Importantly, information from social media platforms may be misinterpreted, if only due to an excessive amount of data (Domalewska, 2020).

The communicative situation occupies an important position in the media. The sender seeks to reduce communicative distance by establishing a shared place and time; to achieve this, journalists most often employ specific scripts and communicative scenarios, or select the style and genre of expression most appropriate to the form of contact they have created (Nowak, Tokarski, 2007). The first of the methods for creating a communicative situation has been

outlined above; the second involves establishing a dialogue and emphasising colloquial style by increasing the number of vulgarisms and blunt statements. The linguistic worldview, or cultural creation, leads to an understanding of the information contained in the message. Rationality is determined by colloquialism, which, as a cultural rather than a normative category, is embedded in the linguistic assumptions of the worldview and is, at the same time, the fundamental style of media communication (Nowak, Tokarski, 2007).

The form of media messages is strictly dependent on the audience, and every information provider should take the audience's preferences and tastes into account. The media should strive to attract viewers; consequently, media language is becoming increasingly expressive, with publications breaking the rules to draw attention to themselves. To achieve the desired effect, measures such as the following are employed:

- the promotion of linguistic kitsch,
- neutralising the formal relationship between sender and receiver,
- the dumbing down of communicative competence,
- linguistic inertia among some journalists who regard their own language and that of their immediate surroundings as the standard and in need of no correction,
- the overuse of vulgarisms and crude expressions.

Currently, the media are geared towards communicating and influencing the reception of messages determined by the sender. They are fulfilling an informational function to an ever-decreasing extent, whilst increasingly presenting entertainment. They shape an image of the world that is not directly accessible to the audience (Wojtak, 2010). Press discourse operates within the broader framework of media discourse, yet the two differ in certain respects. Media messages are characterised by subjectivity and individualism, which is not evident in journalistic reports; yet in both cases there is a vision of the world in which communication takes place between the sender and the recipient (Wojtak, 2010).

4. Summary

A large number of authors of publications on communication in crisis situations assume that a crisis is a negative phenomenon, usually a one-off event that must be overcome in order to return to the baseline state. Furthermore, a crisis situation is not treated as a process, but as a state in which the organisation finds itself and which must be resolved in both technical and symbolic terms (perception and communication). This results in research into what a crisis is, how it negatively affects an organisation, and what strategies can be employed to restore stability. In their deliberations, the authors focus on seeking and proposing solutions that enable the redefinition of the perceptions held by those affected by, or who feel they are affected by,

the consequences of a crisis, with the aim of helping them adapt to the current situation or restore the pre-crisis state.

Meanwhile, a crisis or the threat of a crisis should be used to bring about change. Most threats have significant transformative potential and can lead to the introduction of new solutions that will increase the organisation's productivity and efficiency. The emergence of a crisis should therefore serve as an impetus to move away from maintaining the organisation's status quo in favour of change and continuous development.

Among the many characteristics of a crisis situation, one of the most significant is the growing demand for information. Unfortunately, this interest is most often accompanied by information chaos, the presence of uncertain, false and contradictory information. This situation can be felt by all communication partners and usually contributes to the escalation of the crisis. Hence the general conclusion that there must be no delay in providing information to the key stakeholders involved in the incident. This demonstrates that we are aware of the situation and are already responding to it. Communicating through the mass media provides an opportunity to issue a preliminary statement or present one's position in greater detail – for example, during an interview or a press conference – and this allows one to establish oneself as a source of reliable information. It is also important that we have the opportunity to present an objective picture of the incident and define the scope of the discussion, whilst indicating the communication channels that are important to us.

On the other hand, when communicating with the media, one must not forget that they act as an intermediary through which we convey information to the public. For this reason, it seems essential to define the objectives to be achieved, the target group and select the best method of conveying the information. The fundamental recommendation for those liaising with journalists is to be well prepared, as rebuilding an image once it has been lost is practically impossible in a crisis situation; and if the person responsible for crisis management loses face, the crisis escalates rather than being resolved.

It was noted that during crisis management, direct contact with those affected often occurs, for example when visiting the scene of the incident. This is a crucial form of activity, as it enables one to make one's own assessment of the situation and to develop decisions regarding the restoration of normality. It also helps to build awareness among those affected that they have not been left alone to deal with a situation that is beyond their ability to cope with.

Communication plays a huge role in shaping power relations, inequality and domination. Language can serve as a tool for influencing people. Manipulative and propaganda techniques are used to strengthen political power and influence society. Meanwhile, mass and social media are used both to inform and to influence public opinion.

As mentioned earlier, communication plays a key role in crisis situations, as it helps, for example, to prevent such situations, ensures effective management to resolve them, and also helps to mitigate the crisis, minimise the damage incurred and restore the situation to how it

was before the event. Conversely, ineffective communication can exacerbate a crisis or trigger another one, this time a reputational one. In the context of the lessons learned and certain "benefits" arising from the crisis within the organization, the following can be highlighted:

- Faster improvement of processes and contingency plans; identification of gaps in business continuity and communication.
- Building trust and reputation through transparency, empathy, and effective corrective actions.
- Instilling a culture of openness and accountability within the organization, which translates into better internal collaboration and engagement with stakeholders.
- Advancement of scientific knowledge: practical cases provide data for testing and developing theories, thereby expanding the field of crisis communication.
- Better alignment of the message with the audience and the real needs of stakeholders, which helps avoid information overload and reduce reputational costs.
- The opportunity to use a crisis as a catalyst for innovation in risk management, digital communication, and employee training.

It's also worth noting the issue of innovation, which in this case involves:

- combining AI and real-time monitoring with incident management and integrating data into a single situational view,
- chatbots, automatic updates, and decision-support tools enable consistent communication both within and outside the organization,
- priorities include transparency, storytelling, training, as well as data protection and ethical communication,
- the benefits include faster response times, greater stakeholder trust, improved coordination, and reduced reputational damage and costs.

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ORGANIZATION AND MANAGEMENT SERIES NO. 254

PRIMARY MANAGEMENT STYLES IN POLISH NATIONAL PARKS

Agnieszka PIOTROWSKA-PUCHAŁA

University of Agriculture in Krakow, Faculty of Agriculture and Economics, Department of Economics and Food Economy; a.piotrowska@urk.edu.pl, ORCID: 0000-0003-2045-474X

Purpose: The article aims to identify the primary management styles in Polish national parks and to analyse employees' perceptions of the leadership practices and decision-making methods exhibited by their managers.
Design/methodology/approach: The objective was pursued through a literature review, analysis of response structures, and the chi-square test of independence. The 2025 study used a diagnostic survey with an original questionnaire on perceptions of superiors' management behaviour. A total of 192 correctly completed questionnaires from employees of 19 Polish national parks were analysed.
Findings: The results show that the effectiveness of management styles in Polish national parks hinges primarily on the ability to adapt management styles to the organisational environment, team, and specific institutional characteristics. Furthermore, the survey has demonstrated that catering for interpersonal relationships, communication, and employee engagement in decision-making improves management style effectiveness[1].
Research limitations/implications: The study is limited by variation in sample sizes across the individual national parks and by reliance on respondent reports. Future studies should use better-balanced samples and more diverse research methods to enable deeper analysis of management styles.
Practical implications: The results highlight the need to improve managerial competencies, especially in relationship management and employee development, and support the design of training programmes to enhance efficiency and employee satisfaction.
Social implications: National park management styles affect how they address their public tasks, collaborate as organisations, and manage natural resources. They can also improve public trust in public institutions.
Originality/value: The study contributes to the body of knowledge on management styles in nature protection institutions, a topic that remains empirically understudied. The results offer new data on management practices in Polish national parks and identify the primary management styles in organisations responsible for environmental protection.
Keywords: management style, national park, managerial roles, leadership.
Category of the paper: Case study.

[1] The study was conducted in collaboration with Dr Beata Pater under the mini-project, 'Determinants of job satisfaction among national park employees juxtaposed with managerial styles under the current labour market conditions' under contract K/6601/2024/WRE. The mini-project was co-financed by the Minister of Science under the 'Regional Initiative of Excellence' programme. Agreement No. RID/SP/0039/2024/01. Subsidised amount PLN 6,187,000.00. Project period 2024-2027.

1. Introduction

Leadership in public organisations is an important domain in management sciences. Still, management styles in nature protection institutions, such as national parks, remain empirically understudied. The article aims to identify the primary management styles in Polish national parks and to analyse employees' perceptions of the leadership practices and decision‑making methods exhibited by their managers. The research problem is to determine what management styles are dominant in national parks, and what factors discriminate between perceptions of management practices among employees.

The author puts forward the following research hypotheses: (H1) the primary management styles in Polish national parks are related-participatory; (H2) perceptions of management decision‑making styles vary by employee gender; (H3) management styles reported by employees are linked to their perceptions of management decision‑making methods. The analysis is founded on a theoretical model that integrates traditional leadership concepts and new theories of management in public organisations.

2. Management styles

Management style is defined as a relatively constant manner in which a manager affects their subordinates. It is manifested in decision‑making, communication, and teamwork organisation (Chemers, 2000; Żukowski, Galla, 2009). Furthermore, it is shaped by the manager's personality traits and the situational environment of the specific organisation as well.

The classical leadership studies pioneered by Lewin, Lippitt, and White proposed three basic leadership styles: autocratic, democratic, and liberal, which were then adapted to account for their orientation relative to tasks, interpersonal relationships, and situational factors (Fiedler, 1964; Stogdill, 1974; Karaszewski, 2008; Avery, 2009; Nahavandi, 2009).

The effectiveness of leadership styles varies by sector due to differences in organizational structures, objectives, and the external environment (Imtiaz, 2025). Modern concepts emphasise the importance of management styles founded on cooperation, employee participation, and support for employee development. The literature indicates such concepts as transformational leadership, which involves inspiring employees and fuelling their potential (Bass, 1990; Nahavandi, 2009).

The present study follows a management style typology that includes the compromiser, developer, autocrat, bureaucrat, related, and participatory styles. The styles vary in the degree of employee participation in decision-making and in the manager's task- or relationship-orientation.

The literature offers various management style typologies. The styles can be classified based on how centralised power is, whether the manager is task- or relationship-oriented, or depending on the degree of employee participation (Stogdill, 1974; Griffin, 2017; Robbins, Judge, 2017). Other authors emphasise the importance of aligning management styles to organisational conditions and the role of related and transformational leadership for organisational effectiveness (Fiedler, 1964; Bass, 1990; Nahavandi, 2009).

The compromiser is a manager who is easily influenced by their surroundings, shuns making decisions, and is generally a yes-man. They overrate participation and focus solely on solving problems currently at hand (Polecki, 2018).

The developer/coach style is founded on the premise that the leader should first of all support the employees in discovering and developing their potential by asking questions (Whitmore, 2017).

An autocratic manager makes all decisions by themselves without consulting the team. They centralise authority, strictly control operational methods, make all decisions, and limit employee participation (Robbins DeCenzo, 2019).

A benevolent autocrat embraces the moral responsibility for their subordinates, wants to provide them with the best possible working environment, but still single-handedly defines their well-being needs (Żukowski, 2004).

In the liberal style, the manager barely intervenes in their subordinates' work. They delegate authority and employ only occasional control. They avoid difficult decisions, delegate complex problems, or put them off (Polecki, 2018).

In the bureaucratic style, the manager follows formal operational and control procedures with respect to their subordinates. They prefer written communication and are attentive to detail. They are businesslike, reliable, and effective. Conflicts are resolved through procedures and regulations (Polecki, 2018).

A relationship-oriented management style focuses on fostering positive relationships within the team and a favourable organisational atmosphere. It promotes employee satisfaction and team stability, but if it is not balanced with task orientation, it can limit organisational efficiency (Nahavandi, 2009).

The democratic style involves significant employee participation in decision‑making and delegation of decision authority. The manager coordinates and moderates the team's efforts, thereby promoting increased employee engagement and better decision quality (Tannenbaum, Schmidt, 1958; Lumbasi et al., 2016). Managers typically demonstrate a leadership style by motivating and inspiring their subordinates. A leadership style, therefore, refers to the way in which a manager chooses to lead and interact with their subordinates (Northouse, 2018).

3. General characteristics of national parks

The national park is one of the most advanced means of environmental protection in Poland. Its primary purpose is to preserve biodiversity and safeguard environmental and landscape qualities. National parks serve scientific, educational, and social functions (Kruk, 2011).

Due to the specific profile of these institutions, their employees exhibit a high level of professional specialisation, and the tasks they pursue require interdisciplinary collaboration. This makes leadership competencies of the management and team management styles highly relevant.

4. Method of the study

The diagnostic survey was conducted in 2025. The author used an original survey questionnaire that included questions about perceptions of the management behaviour of direct superiors.

The questions covered the identification of the management style, the manager's decision-making processes, and the respondents' demographic data.

The sample consisted of 197 employees of 19 Polish national parks. The analysis involved 192 correctly completed questionnaires. The sample consisted of 51% women and 49% men. Most respondents held a university degree (72.4%) and had more than six years of professional experience (58.3%).

Purposive convenience sampling was necessary due to the functional profiles of the institutions. The participation in the anonymous survey was voluntary.

The data were analysed with answer structure analysis and the chi‑square test of independence to identify associations between the qualitative variables. The study was conducted as an anonymous survey among employees of Polish national parks. The questionnaires were distributed directly to the respondents and only to employees of the investigated organisations. Participation was voluntary.

The study population is employees of Polish national parks. Therefore, the results can be situated within the operational context of these institutions and the management styles embedded in their organisational structures. However, note that the varying numbers of respondents across the national parks could limit the sample's representativeness for generalising to the entire population of national park employees in Poland. The differences in respondent numbers across the national parks were due to different return rates. The greater number of employees of Białowieża National Park resulted from their willingness to participate in the study, thereby increasing the institution's representation in the sample.

Respondents were aware of the purpose of the study and the confidentiality of their answers. Each respondent completed their questionnaire alone, without supervision, to reduce external influences on their responses.

5. Results

The survey sample consisted of employees of 19 national parks in Poland, with 51% women and 49% men. The largest group was the employees of the Białowieża National Park (31.77%). Other significant groups were from Polesie National Park (11.46%), Słowiński National Park (10.42%), and Wigry National Park (9.90%). The other parks had smaller representation, and none exceeded 7% of the total sample size. The varied sample distribution across the national parks was due to organisational circumstances and respondent availability. The diagnostic exploratory study was intended to identify general patterns of management styles in national parks, rather than offer cross‑park comparisons. The study involved employees from 19 Polish national parks (see Figure 1).

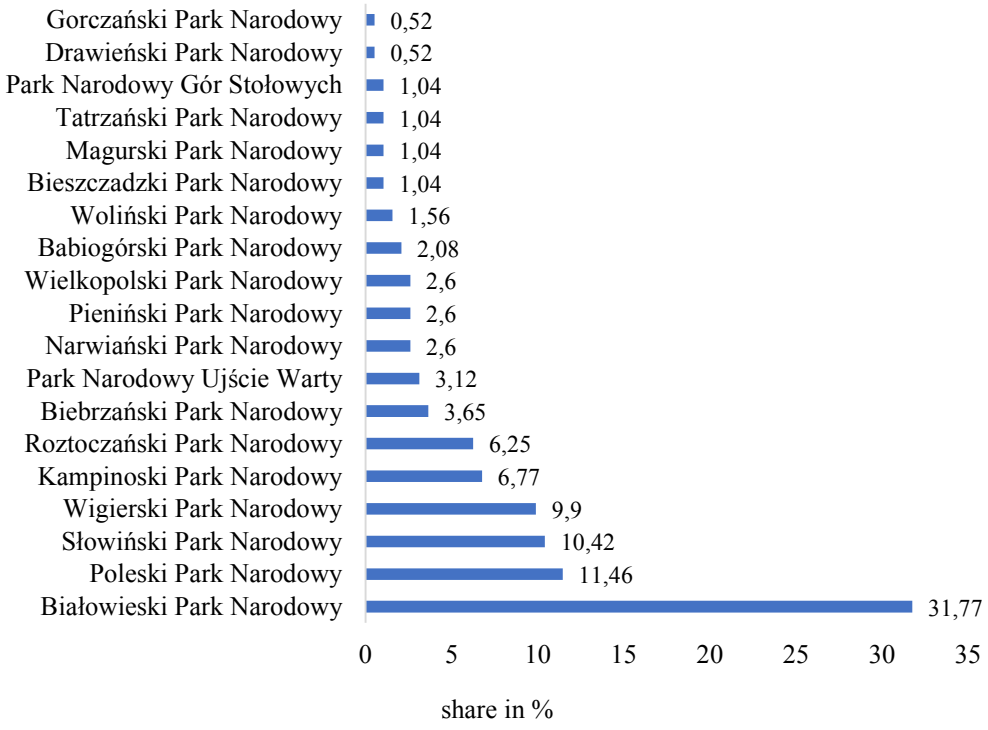

Figure 1. Sampled profile by national parks.

Source: original work.

The anonymous survey was conducted among specialists and operators who reported the primary management-related behaviours of their superiors. The results show differences by gender. Women more often reported consulting decisions and taking others' opinions into consideration. Meanwhile, men more often perceived their superiors as more autonomous and making decisions mainly based on their own knowledge and experience, while limiting consultations. The respondents were asked to indicate a single behaviour typical of their superior from each domain to determine the management style (see Table 1).

Table 1.
The most common answers regarding the management style of the immediate superior

domain	the most common answer	%
the primary management principle	strict but fair	40.1
planning	forwarding requests from superiors	24.4
work organisation	joint decision	23.9
decision-making	considering multiple opinions	24.9
motivating	employee development	29.9
control	objective evaluation	28.9
conflict resolution	compromise	25.9

Source: original work.

The answers demonstrate that the primary management style is related and consultative, which combines expectations with fairness and employee development. Work planning and decision-making were mainly based on cooperation, considering the opinions of others, and a search for compromise.

Task structure demonstrated a combination of task‑oriented and participatory approaches, while motivation was dominated by development orientation. In terms of control, the respondents reported objective evaluation of performance and conflict resolution through compromise. Communication with employees consisted mainly of forwarding information about tasks and requisites.

These results confirm that the management styles are mostly based on cooperation, consultation, and orientation towards interpersonal relationships.

The respondents indicated that the most common management styles exhibited by their direct managers were compromiser (26%) and developer (25%) (see Figure 2).

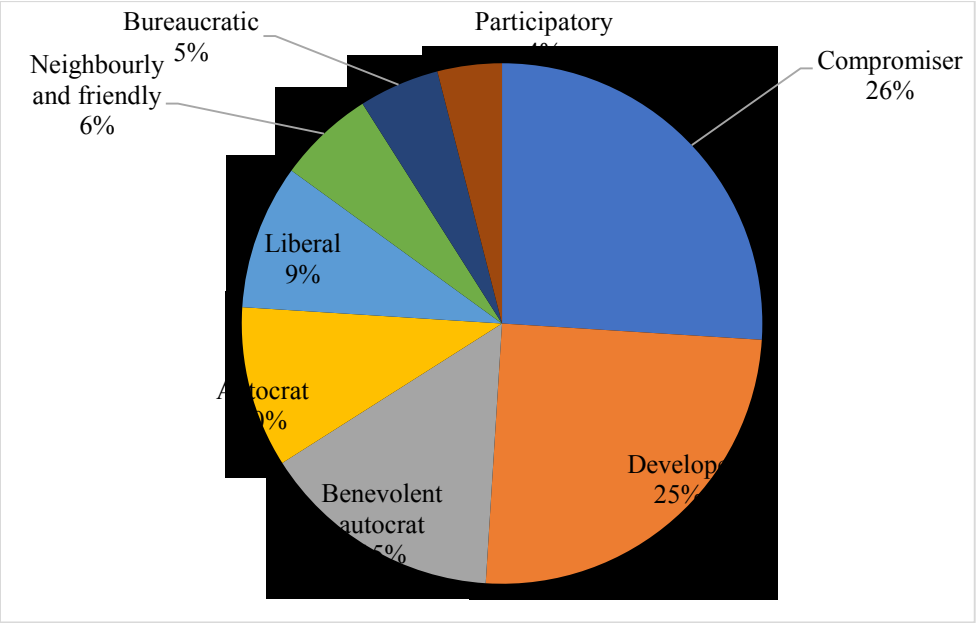

Figure 2. The primary management styles exhibited by direct managers in the national parks (n = 192). Source: original work.

The employees reported related and participatory management styles oriented towards cooperation and employee development. The compromiser style promotes harmony and a positive atmosphere; however, it can harm the effectiveness of decision-making. The developer style supports competence-building and the expansion of the organisation's potential, which is important in public institutions tasked with complex environment-related work. The variables included management style, decision-making methods, and respondent demographics (Table 2).

Table 2.
Variable operationalisation

Variable	Indicator	Measurement scale	Measurement method
Management style	Dominant manager behaviour	nominal	selection of a single management style
Decision-making method	Degree of decision independence	nominal	respondent's declaration
Respondent's sex	Woman/man	nominal	demographic question
Education	Level of education	ordinal	demographic question
Job seniority	Years of professional experience	ordinal	demographic question

Source: original work.

The above operationalisation of the variables indicates that the study was based mainly on qualitative, nominal and ordinal, variables. The central variable was management style, identified from the reported evaluations of managers' behaviour. The demographic variables make up the sample profile, which helped analyse different perceptions of management style depending on respondents' characteristics (Table 3).

Table 3.
Respondent's sex versus perceptions of decision‑making methods

Variable	chi-square χ^2	df	p	Cramér's V
Sex × decision-making method	6.69	7	0.462	0.18

Source: original work.

The chi-square test analysis (Table 3) did not reveal a statistically significant association between respondents' sex and perceptions of how their managers make decisions $\chi^2(7) = 6.69$, $p = 0.462$, $V = 0.18$. No differences in the distribution of respondents' answers were statistically significant.

6. Discussion and conclusions

The present results indicate that the main management styles in the national parks are those based on cooperation, interpersonal relationships, and employee development. These results are consistent with the premises of the situational leadership theory and transformational leadership concepts (Fiedler, 1964; Bass, 1990).

The dominance of the compromiser style may suggest the pursuit of good relationships and low conflict rates. In addition, the high level of the developer style suggests an orientation towards employee competence and the organisation's potential building.

The character of public institutions is conducive to styles based on cooperation and interpersonal relationships, while management effectiveness hinges mostly on the social competencies of the managers. Furthermore, the study identified different perceptions of how decisions are made. Women more often indicated the consultative approach, while men reported decision independence (Amanchukwu et al., 2015; Dębicka, 2023). The results reveal the specific profile of management styles in environmental protection. It is strongly oriented towards public mission, exhibits a high level of employee specialisation, and has a relatively stable organisational structure. Under these circumstances, management effectiveness could be strongly linked to interpersonal competencies and relationship-building ability, rather than to an orientation towards economic performance, as confirmed in previous studies on management in public organisations (Mehrabi et al., 2013).

The results also confirm the premises of the situational approach in leadership theory, which proposes that the degree of adaptation of behaviour and operational methods by the management depends on the organisation's specificity, employee team characteristics, and management style (Chemers, 2000). Relationship-oriented styles in national parks could be promoted by the specific attributes of tasks that require cooperation, high levels of responsibility, and employee engagement.

The study contributes to the body of knowledge by providing insights into management styles within environmental protection institutions, a topic that remains relatively underexplored. The results suggest the need for further studies on factors affecting the effectiveness of management styles in public organisations and their impact on the efficiency of public service and the functioning of employee teams.

Hypotheses were verified by analysing the structure of the respondents' answers and using the chi‑square test of independence for qualitative variables.

Hypothesis H1 proposed the dominance of the related and participatory styles in national parks. According to the results, the most common styles were compromiser (26%) and developer (25%), which partially confirms the hypothesis.

Hypothesis H2 concerned the association between the respondent's sex and their perceptions of decision‑making methods used by their superiors. The chi‑square test did not reveal a statistically significant relationship ($\chi^2(7) = 6.69$; $p = 0.462$). Therefore, this hypothesis has not been confirmed. A significant association was found between the management style and decision‑making method ($\chi^2(49) = 166.04$; $p < 0.001$).

Higher education was reported by 72.4% of the sample. Over fifty‑eight per cent had more than six years of professional experience, which indicates a high level of competencies and employment stability. The results reveal predominance of management styles grounded in cooperation and employee support, typical of public organisations in the environmental domain.

Recommendations

The present results indicate that the effectiveness of management styles in national parks depends largely on management's alignment with the organisation's and the employee team's specific characteristics. The study identified the need to develop communication, cooperation, and shared employee decision-making competencies among the management, which may improve management effectiveness in environmental protection institutions. Participatory management styles and conditions for vertical dialogue are advisable for national park management practice. Further studies on the determinants of the effectiveness of public organisation management styles are recommended, involving a broader research sample and diversified research methods.

Research limitations

The study is limited by the survey method, which relies on subjective employee input. The results reflect mostly their perceptions of management styles, which may limit the potential for a full generalisation to all national park employees in Poland.

Further research

Future research should conduct a broader analysis using a larger, more balanced sample of employees from all Polish national parks to achieve a more representative evaluation of management styles in these institutions. The analysis could also gain a new dimension by employing qualitative methods, such as in‑depth interviews with management, and by investigating the impact of organisational factors, such as job seniority, job position, or the organisational structure of the parks, on perceptions of management styles and decision-making processes.

Acknowledgements

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PSYCHOLOGICAL SAFETY AND JOB SATISFACTION IN LARGE ENTERPRISES – THE RESULTS OF QUALITATIVE RESEARCH

Grzegorz PLEZIA

Faculty of Engineering Management, Bialystok University of Technology; grzegorz.plezia@gmail.com, ORCID: 0009-0004-9225-9796

Purpose: This article examines the association between psychological safety and overall job satisfaction among employees in large enterprises. It also identifies which psychologically safe experiences are most closely linked to overall job satisfaction.
Design/methodology/approach: The study draws on an anonymous cross-sectional questionnaire completed by employees of large enterprises. Psychological safety was measured with Amy Edmondson's seven-item scale. Overall job satisfaction was measured with a single global item embedded in an adapted work environment questionnaire based on Gallup's Q12 framework. The analysis used correlation coefficients, ordinary least squares regression with selected controls, and an exploratory item-level assessment of psychological safety components.
Findings: The results show a strong positive association between self-reported psychological safety and overall job satisfaction in the analysed sample. The relationship remained visible after adjustment for selected individual and work-context characteristics. At item level, the strongest links concerned recognition of one's distinctive contribution and ease of seeking help.
Research limitations/implications: The study is based on a purposive sample, cross-sectional self-report data, and a large-enterprise setting, which limits causal inference and broader generalisation. The use of a single global satisfaction item narrows measurement scope. Future studies should test these relationships in broader samples, use longitudinal designs, and examine psychological safety, employee engagement, and job satisfaction within one model.
Practical implications: The findings suggest that job satisfaction depends not only on formal job conditions, but also on the daily interpersonal climate shaped by managers and teams. Leaders should lower the social cost of asking for help, respond constructively to mistakes and uncertainty, and make individual contribution more visible.
Social implications: By drawing attention to relational conditions linked to employees' overall evaluation of work, the study may support healthier workplace climates and better quality of working life in complex organisations.
Originality/value: The article offers a focused analysis of psychological safety in relation to overall job satisfaction in a large-enterprise setting. It also shows which psychological safety experiences appear most closely connected to favourable overall work evaluations.
Keywords: psychological safety, job satisfaction, human capital management.
Category of the paper: Research paper.

1. Introduction

Job satisfaction remains a useful employee-level indicator because it captures how people assess their work as a whole, not only selected parts of it (Locke, 1976). From a management perspective, that matters because broad evaluations of work are linked to retention-related attitudes, day-to-day functioning, and the wider quality of organisational life. In large enterprises, the issue is especially relevant. Employees work within layered structures, formal procedures, and varied local management climates. Their experience of work is shaped by formal role design as well as by the way daily interaction unfolds.

One factor that may be relevant in this context is psychological safety. Psychological safety refers to a climate in which interpersonal risk does not carry disproportionate penalty, for example when people ask for help, admit uncertainty, raise concerns, or discuss mistakes. (Edmondson, 1999; Edmondson, Lei, 2014). The construct is often discussed in relation to learning, employee voice, and adaptation. It may also matter for broader judgments about work as employees do not experience work only through tasks and targets. They also respond to cues such as whether questions are welcomed, whether difficulty can be acknowledged without loss of standing, and whether individual contribution is recognised.

Research in this area points to a positive relationship between psychological safety and employee outcomes, though the evidence is not uniform. Reviews show that psychological safety is associated with a range of workplace attitudes and behaviours, while also noting variation across settings, measures, and levels of analysis (Abror, Patrisia, 2020; Edmondson, Bransby, 2023; Frazier et al., 2017). Recent studies also suggest links with job satisfaction, though much of that evidence is context-specific and based on cross-sectional self-report data (Etti et al., 2025; Kim, Kim, 2020; Kuo et al., 2019; Stühlinger et al., 2019). That pattern supports further study, but it does not justify strong causal claims.

The construct has also received growing attention in Polish management scholarship. Recent work has discussed psychological safety both as an organisational phenomenon and as a measurement issue in enterprises operating in the Polish context (Pfejfer-Buczek, 2023; Steinerowska-Streb, 2020, 2022). This local body of work strengthens the relevance of the topic, though it does not replace direct evidence from specific organisational settings.

This article examines the relationship between self-reported psychological safety and overall job satisfaction among employees working in large enterprises. It also explores which psychological safety experiences are most closely linked to overall job satisfaction. The study treats the observed links as associations within the analysed sample, not as proof of causal direction.

2. Literature review

2.1. Job satisfaction as a global employee evaluation

Job satisfaction is usually understood as an employee's overall appraisal of work, reflecting how positively or negatively the person evaluates the job as a whole (Locke, 1976). In management research, that makes job satisfaction a useful summary indicator as it reflects the combined effect of work demands, social relations, rewards, support, and the wider organisational setting (Brief, Weiss, 2002). In this article, overall job satisfaction is treated as an outcome in its own right.

Even though single-item global measures do not capture the full multidimensional structure of satisfaction, they can still provide a defensible estimate when the main interest lies in broad evaluative judgment rather than in separate facets of work (Dolbier et al., 2005; Wanous et al., 1997). This logic was adopted in the current paper.

2.2. Psychological safety as a relational condition of work

Psychological safety describes a context in which people believe that questions, concerns, uncertainty, and mistakes can be voiced without excessive interpersonal cost (Edmondson, 1999; Edmondson, Bransby, 2023). The concept is often tied to learning and speaking up but its relevance is wider than that. Employees also form views about work through repeated relational cues. They notice whether help-seeking is accepted, whether mistakes trigger blame, and whether individual strengths are seen and used. These experiences may shape how people judge the quality of their work life overall.

2.3. Evidence on the link between psychological safety and job satisfaction

The available evidence suggests a positive association between psychological safety and favourable employee attitudes, including satisfaction-related outcomes. At the same time, the strength and meaning of that relationship vary by context and study design. Meta-analytic and review work places psychological safety within a broader network of workplace attitudes and behaviours and reports links with satisfaction-related variables, commitment, and learning-related outcomes (Abror, Patrisia, 2020; Edmondson, Bransby, 2023; Frazier et al., 2017).

Recent empirical studies offer more detailed clues. Kim and Kim (2020) found that psychological safety and job satisfaction acted as sequential mediators in the link between perceived corporate social responsibility and performance-related outcomes. Kuo et al. (2019) showed that psychological safety strengthened the relationship between proactive personality and change in job satisfaction. Etti et al. (2025) reported that leader-related and team-related psychological safety were associated with higher job satisfaction and lower intention to leave among early-career physicians. Stühlinger et al. (2019) linked relational coordination and psychological safety to job satisfaction in healthcare. Work on psychosocial safety climate also

points in a similar direction, though that literature places more emphasis on management commitment and communication about psychological health than on local team interaction alone (Lintanga, Rathakrishnan, 2024).

2.4. Gaps in the evidence and study rationale

Nonetheless, several issues remain open. Much of the evidence is based on cross-sectional designs, which limits strong conclusions about directionality and leaves room for reciprocal interpretation (Abror, Patrisia, 2020; Edmondson, Bransby, 2023; Frazier et al., 2017). The literature also spans related but distinct constructs, including team psychological safety and psychosocial safety climate, which makes direct comparison less straightforward (Edmondson, Lei, 2014; Lintanga, Rathakrishnan, 2024). In addition, evidence remains uneven across sectors and organisational forms, with a visible concentration in healthcare and other coordination-intensive settings (Etti et al., 2025; Stühlinger et al., 2019). These limits do not weaken the topic, but they show why additional evidence is useful, provided that claims remain modest and tied to the design.

This study addresses that need by examining the relationship between self-reported psychological safety and overall job satisfaction in a purposive sample of employees working in large enterprises. Its contribution is not a claim of a wholly new relationship. The value lies in a focused estimate of that relationship in a large-enterprise setting and in the closer look at which psychological safety experiences show the strongest association with favourable work evaluations.

2.5. Research aim and analytical expectations

The study aims to examine whether self-reported psychological safety is related to overall job satisfaction among employees working in large enterprises. More specifically, it estimates the direction and strength of that association and tests whether it remains visible after adjustment for selected respondent and work-context characteristics. The study also includes an exploratory item-level analysis of the psychological safety scale. Two analytical expectations were specified:

- Hypothesis 1: Self-reported psychological safety is positively related to overall job satisfaction among employees working in large enterprises.
- Hypothesis 2: The positive relationship between psychological safety and overall job satisfaction remains statistically significant after adjustment for selected individual and work-context characteristics.

No separate confirmatory hypothesis was specified for the individual psychological safety items. Their analysis is exploratory and serves to extend the managerial usefulness of the findings.

3. Methods

3.1. Study design and analytic focus

The study is based on an anonymous cross-sectional questionnaire and treats the individual employee as the unit of analysis. It does not seek to estimate causal effects – the purpose is to estimate the direction and strength of the observed association, test whether that relationship remains visible after adjustment for selected respondent and work-context characteristics, and explore which psychological safety experiences have the closest link to overall job satisfaction.

For transparency, this article presents a distinct secondary analysis of survey data used previously in a related publication focused on employee engagement (Plezia, Moczydłowska, 2025). Yet, the current paper differs in its focal outcome, analytical emphasis, and interpretation. It concentrates on overall job satisfaction as a global evaluative employee judgment and derives implications tailored to that outcome.

3.2. Sample and eligibility criteria

The target population consisted of employees working in enterprises employing more than 250 people. The sampling strategy was purposive and relied on organisational access channels and the researcher's professional network. Eligibility required employment in a qualifying organisation and at least three months of tenure in the current company. Responses from individuals not meeting these conditions were excluded from the final dataset.

Data were collected through an online questionnaire distributed in two ways, through selected HR channels and through individual invitations within professional networks. Participation was voluntary and anonymous. A total of 137 questionnaires were obtained. Eight cases were excluded because they did not meet the inclusion criteria. The final dataset comprised 129 observations. The sample should be treated as a purposive analytical sample, not as a representative cross-section of all employees in large organisations.

3.3. Questionnaire construction and measures

Two self-report instruments were combined into one digital questionnaire prepared in Polish and English. Questionnaire design and administration followed standard guidance for survey research, with attention to clarity, brevity, and usability in self-administered formats (Rowley, 2014).

Psychological safety was measured with Amy Edmondson's seven-item scale, adapted for respondent self-report (Edmondson, 1999). Items were rated on a five-point Likert scale. Negatively worded items were reverse-coded before constructing the composite measure. The psychological safety score was calculated as the mean of the seven items.

Overall job satisfaction was the focal outcome. It was measured with a single global item included in an adapted work-environment block based on Gallup's Q12 framework (Harter et al., 2009). Responses were recorded on a five-point Likert scale. This choice reflects the study's focus on broad work appraisal rather than on a multidimensional decomposition of satisfaction. Prior research suggests that single-item overall job satisfaction measures can show acceptable convergence with longer scales when the goal is to capture general evaluation rather than separate components (Dolbier et al., 2005; Wanous et al., 1997).

The adjusted analyses also included selected individual and contextual characteristics available in the dataset: job level, total tenure, industry, organisation size, and gender. These variables were included to test whether the main relationship remained visible after basic adjustment, not to build a full explanatory model of job satisfaction.

3.4. Analytical strategy

The analysis proceeded in three steps. First, descriptive statistics were calculated for the focal variables. Second, the association between psychological safety and overall job satisfaction was examined with correlation analysis, using both parametric and non-parametric coefficients as a robustness check. Third, ordinary least squares (OLS) regression was used to test whether the relationship remained visible after adjustment for selected respondent and work-context variables. The study also included an exploratory item-level analysis to identify which facets of psychological safety are most closely associated with overall job satisfaction. Supplementary subgroup analyses were used to examine differences across selected organisational categories.

3.5. Ethical and procedural considerations

The study followed standard expectations for anonymous survey research in the social sciences. Participants were informed about the purpose of the study, the voluntary nature of participation, and the anonymous treatment of responses. No personally identifying information was collected, and results are reported only in aggregate form.

Because the study relies on cross-sectional self-report data collected through a single instrument, the findings remain open to common method bias and related response effects, even though anonymity and relatively brief measures reduce part of that risk (Podsakoff et al., 2003).

4. Results

4.1. Descriptive statistics

The analysed dataset comprised 129 observations retained after application of the inclusion criteria. In the final sample, the mean level of psychological safety (PS) was 3.98 with a standard deviation of 0.91. The mean level of overall job satisfaction (SAT) was 3.60 with a standard deviation of 1.15 (Figure 1). The psychological safety scale showed high internal consistency, with Cronbach's alpha equal to 0.90.

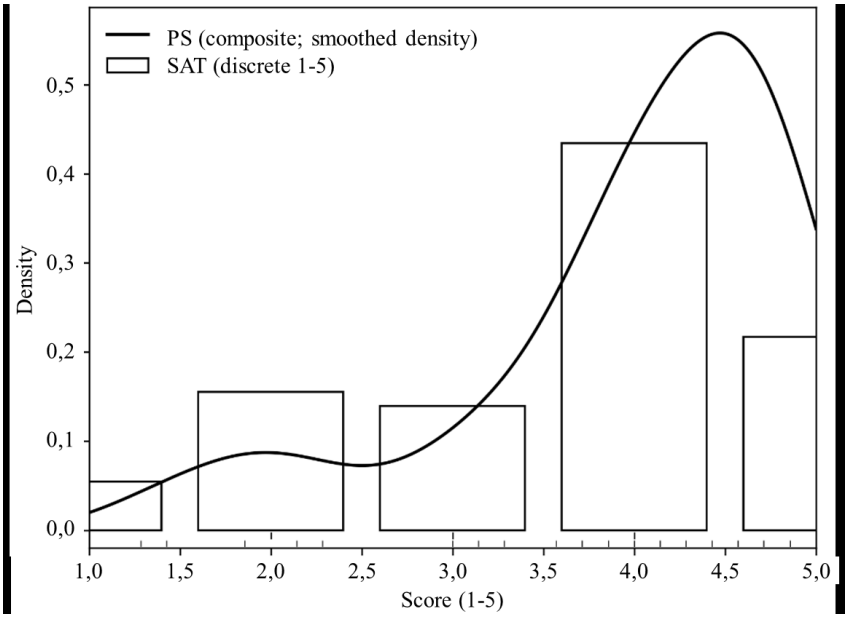

Figure 1. Distribution of psychological safety and overall job satisfaction.
Source: Author's own elaboration.

4.2. Tests of the analytical expectations

The first analytical expectation concerned the bivariate association between psychological safety and overall job satisfaction. The results show a strong positive correlation between the two variables. Pearson's correlation coefficient was $r = 0.74$, $p < 0.001$, while the corresponding non-parametric estimate was Spearman's rho = 0.68, $p < 0.001$. The closeness of these coefficients suggests that the observed pattern does not depend on parametric assumptions alone. These results support Hypothesis 1.

A simple ordinary least squares regression was then estimated with overall job satisfaction as the dependent variable and psychological safety as the sole predictor. The model was statistically significant and explained 55% of the variance in job satisfaction, $R^2 = 0.55$, $F(1,127) = 153.86$, $p < 0.001$. The unstandardised regression coefficient for psychological safety was $b = 0.94$, $SE = 0.08$, 95% CI [0.79, 1.09], which indicates that higher psychological safety scores were associated with higher job satisfaction in the sample (Figure 2).

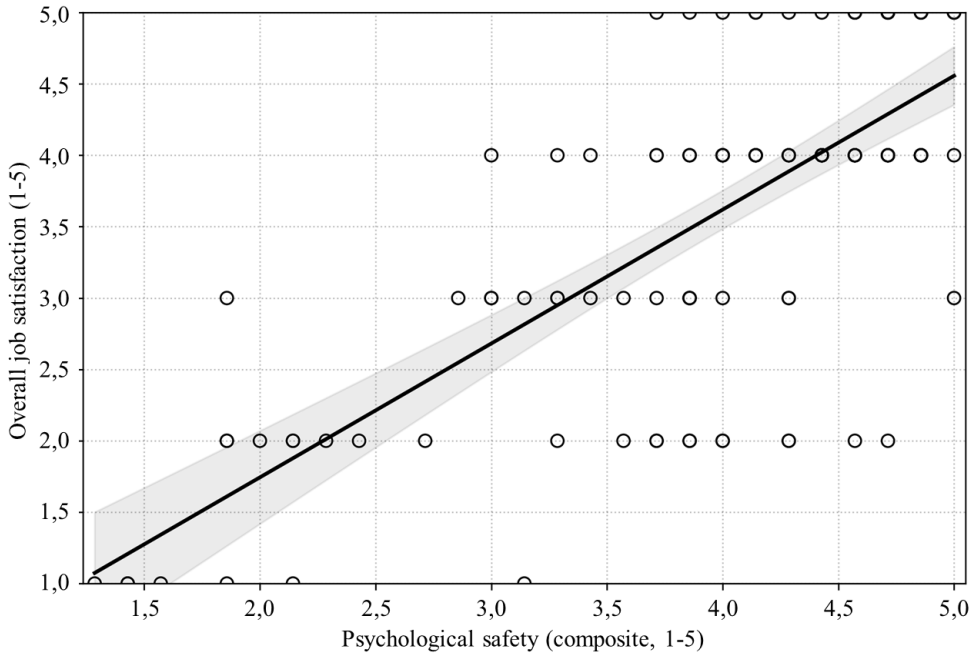

Figure 2. Psychological safety and overall job satisfaction correlation with fitted regression line.
Source: Author's own elaboration.

The second analytical expectation concerned whether the relationship remained visible after adjustment for selected respondent and work-context characteristics. To test this, overall job satisfaction was regressed on psychological safety while controlling for industry, organisation size, job level, total tenure, and gender. The adjusted model remained statistically significant, with $R^2 = 0.63$, adjusted $R^2 = 0.56$, $F(20,108) = 9.00$, $p < 0.001$. Within this model, psychological safety remained a strong positive predictor of overall job satisfaction, with $b = 0.92$, $SE = 0.09$, $t = 10.18$, $p < 0.001$, 95% CI [0.74, 1.10]. These findings support Hypothesis 2.

4.3. Exploratory item-level findings

To extend the practical value of the construct-level results, the seven psychological safety items were examined separately in relation to overall job satisfaction – this part of the analysis was exploratory. Negatively worded items were reverse-coded so that higher scores always reflected more favourable psychological safety perceptions.

At the bivariate level, three items showed the strongest relationships with overall job satisfaction. The clearest link was observed for PS7, which reflects the perception that one's unique skills and talents are valued and used, with $r = 0.68$. This was followed by PS4, which captures the sense that it is safe to take interpersonal risks, with $r = 0.64$, and PS5-rev, which indicates that it is easy to ask others for help, with $r = 0.63$.

Because the seven items reflect related aspects of the same broader construct, a simultaneous regression was estimated to examine their unique relationships with job satisfaction when overlap among items was considered. In this model, two items retained

statistically reliable coefficients: PS7, $\beta = 0.32$, $p < 0.005$, and PS5-rev, $\beta = 0.23$, $p < 0.05$. Expressed in the original response metric, a one-standard-deviation increase in the perception that one's unique skills are valued corresponded to about 0.32 points higher overall job satisfaction on the five-point scale. The remaining items, including PS4, showed smaller coefficients once shared variance with the other psychological safety items was controlled (Figure 4).

These exploratory results suggest that the relationship between psychological safety and job satisfaction is not spread evenly across all parts of the scale. In this sample, the strongest patterns concern whether employees feel that their contribution is recognised and whether asking for help carries low interpersonal cost.

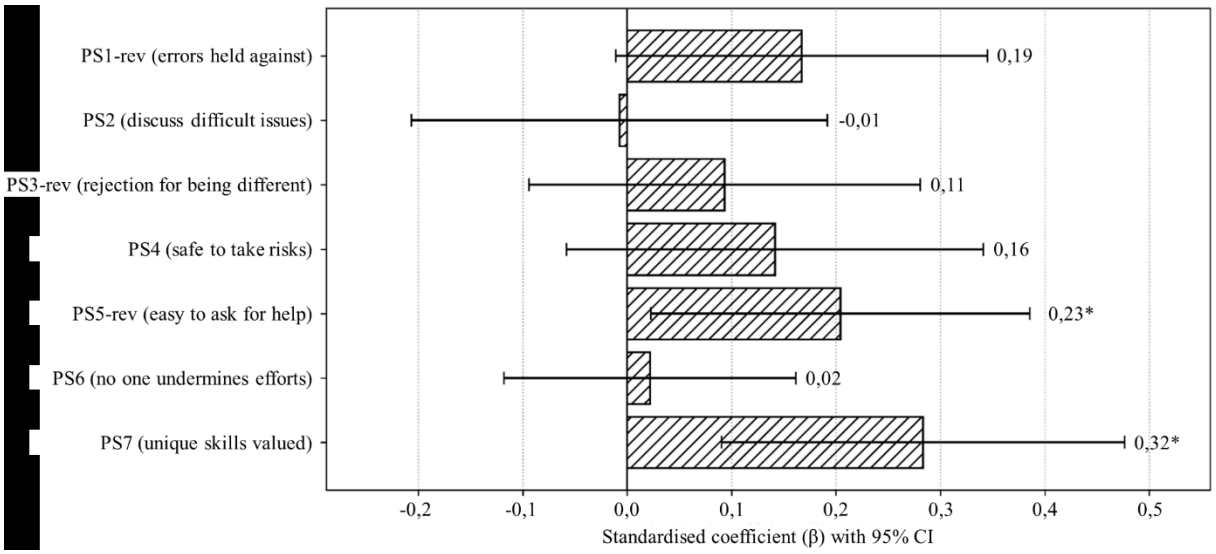

Figure 3. Standardized coefficients from the simultaneous regression of overall job satisfaction on Edmondson's 7-item scale.

Source: Author's own elaboration.

4.4. Supplementary subgroup differences

Additional analyses examined whether psychological safety and overall job satisfaction differed across selected respondent groups. These findings are supplementary to the main construct-level analysis and should be read with caution.

The clearest subgroup differences concerned job level. Mean values of both psychological safety and overall job satisfaction were highest among directors and lowest among junior-level staff. The strongest contrast was observed between directors and specialists. For psychological safety, the adjusted mean difference was 0.80 points, 95% CI [0.06, 1.53], $p_{adj} = 0.028$. For overall job satisfaction, the corresponding difference was 1.30 points, 95% CI [0.37, 2.23], $p_{adj} = 0.0017$.

Differences also emerged by total professional experience, though more clearly for psychological safety than for job satisfaction. The strongest contrast in psychological safety was between respondents with 3 to 5 years of experience and those with more than 10 years, with a mean difference of 0.83 points, 95% CI [0.14, 1.51], p_adj = 0.0107.

Industry differentiated psychological safety more clearly than overall job satisfaction. Two contrasts were especially notable: training and development versus manufacturing, mean difference = 1.61, 95% CI [0.19, 3.04], p_adj = 0.014, and consulting versus manufacturing, mean difference = 1.49, 95% CI [0.07, 2.91], p_adj = 0.0304. For job satisfaction, industry-level differences were weaker and did not cross the adjusted significance threshold.

5. Discussion

This study examined whether self-reported psychological safety is related to overall job satisfaction among employees working in large enterprises, and which psychological safety experiences are most closely linked to favourable work evaluations. The results show a strong positive correlation between the two constructs in the analysed sample. That pattern remained visible after adjustment for selected individual and work-context characteristics. This result is consistent with earlier work that places psychological safety within a broader set of appreciative employee attitudes and work-related outcomes (Abror, Patrisia, 2020; Edmondson, Bransby, 2023; Frazier et al., 2017). It also fits more specific empirical findings linking psychological safety with job satisfaction in healthcare and change-related settings (Etti et al., 2025; Kim, Kim, 2020; Kuo et al., 2019; Stühlinger et al., 2019).

The contribution of the study is narrower than a broad claim that psychological safety improves positive employee outcomes in general. The value of the present analysis lies in showing that psychological safety is closely linked to overall job satisfaction in a purposive sample of employees from large enterprises, and that this link appears strongest where employees experience low interpersonal cost around seeking help and a clear sense that their distinctive qualities and contributions are recognised and used. Job satisfaction is not the same as engagement, however. It reflects a broader judgment about whether work feels supportive, workable, and worth doing (Brief, Weiss, 2002). This distinction is important because much of the psychological safety literature has focused more heavily on learning, employee voice, and speaking up than on broad evaluative judgments about work (Edmondson, Lei, 2014).

The item-level findings sharpen that finding. Among the Edmondson's seven items, the strongest bivariate links with overall job satisfaction concerned recognition of unique skills and talents, perceived safety in taking interpersonal risks, and ease of asking others for help. Once overlap among items was considered, recognition of one's distinctive contribution and ease of help-seeking remained the clearest unique correlates. This pattern fits prior work

suggesting that employees respond not only to broad climate perceptions, but also to concrete relational cues that shape whether work feels manageable and socially sustainable (Etti et al., 2025; Stühlinger et al., 2019). It also matches the view that psychological safety matters partly because it lowers the social cost of support seeking and supports more constructive everyday work coordination (Edmondson, Bransby, 2023; Frazier et al., 2017).

The subgroup analyses offer added context, though they should be interpreted with caution. Higher scores on both psychological safety and job satisfaction were observed among directors, while lower levels were found among more junior staff and specialists. Professional experience and industry profile also differentiated psychological safety more clearly than job satisfaction. These patterns may reflect differences in role discretion, access to support, accumulated organisational knowledge, or local work norms. That reading is in line with earlier studies showing that psychological safety is shaped by contextual conditions, including local leadership and work-group processes, rather than operating as a fixed individual disposition (Edmondson, 1999; Edmondson, Lei, 2014). Given the purposive sample and uneven subgroup sizes, these findings are best treated as descriptive rather than definitive.

The practical implications follow from this satisfaction-focused interpretation of the findings. First, managers should treat psychological safety not as a slogan, but as a pattern of repeated interpersonal experiences that shape how employees evaluate the quality of their work. In the present data, job satisfaction was most closely linked to whether asking for help was straightforward and whether employees felt that their strengths were genuinely recognised. This points attention to daily responses to questions, uncertainty, and requests for support, as well as to visible use of employees' contribution. Second, job satisfaction appears to depend not only on formal job features, but also on the social conditions under which work is carried out. This broader interpretation is consistent with studies showing that safety-related climates and relational coordination are associated with satisfaction-related outcomes, even where the organisational context differs from the one examined here (Kim, Kim, 2020; Lintanga, Rathakrishnan, 2024; Stühlinger et al., 2019). Third, organisations should be cautious when reading aggregate satisfaction scores without looking at the relational conditions beneath them.

The study also has clear limits considering the design is cross-sectional, based on self-report data, and restricted to a purposive sample of employees in large enterprises. These features limit causal inference and narrow the scope of generalisation, a point already visible in broader review work on psychological safety (Abror, Patrisia, 2020; Edmondson, Bransby, 2023; Frazier et al., 2017). The use of a single global job satisfaction item also narrows measurement scope, even though prior evidence suggests that such measures can provide acceptable estimates of overall job appraisal in survey settings (Dolbier et al., 2005; Wanous et al., 1997). The self-report design also leaves open the possibility of common method bias and overlap with related constructs (Podsakoff et al., 2003).

One further caution follows from the relationship between the present manuscript and the previously published engagement paper based on the same broader survey programme. That earlier article reported a strong positive correlation between psychological safety and overall job satisfaction, but also showed that the psychological safety and job satisfaction relationship did not remain significant after controlling for employee engagement, whereas the engagement-job satisfaction relationship remained significant after controlling for psychological safety (Plezia, Moczydłowska, 2025), which does not negate the present findings. It does suggest that part of the observed association between psychological safety and job satisfaction may overlap with broader motivational or engagement-related processes. That interpretation also fits the wider literature, where psychological safety is linked to adjacent attitudes and behaviours rather than to one isolated outcome alone (Edmondson and Bransby, 2023; Frazier et al., 2017).

Future research should address these limits directly. Longitudinal designs would help determine whether higher psychological safety precedes higher job satisfaction, whether the relationship is reciprocal, or whether both are shaped by broader organisational conditions. Studies using broader and more varied samples could test whether the present pattern holds outside large-enterprise settings. Multi-item satisfaction measures would allow a more detailed assessment of whether psychological safety is more strongly linked to relational, developmental, or overall evaluative parts of satisfaction (Dolbier et al., 2005; Wanous et al., 1997). Studies that model psychological safety, employee engagement, and job satisfaction together would also help separate overlap from distinction more clearly.

6. Summary

This article examined whether self-reported psychological safety is related to overall job satisfaction among employees working in large enterprises. In the analysed sample, the association was strong and consistently positive. Employees who reported higher psychological safety also tended to report higher overall job satisfaction, and this pattern remained visible after adjustment for selected respondent and work-context characteristics.

The study also showed that the psychological safety construct is not equally informative across all of its component experiences. The clearest patterns concerned whether employees felt that their distinctive contribution was genuinely recognised and whether help could be sought without interpersonal cost. This suggests that job satisfaction may depend less on broad declarations about openness and more on repeated experiences of support, recognition, and workable social interaction.

For management practice, the findings point to the interactional side of work, where leaders may shape this through their responses to questions, uncertainty, requests for help, and visible use of employees' strengths. A workplace in which asking for support is normal and individual contribution is clearly valued and recognised may be more likely to sustain favourable overall work evaluations than one that relies only on formal policies or broad cultural statements.

The results still need to be understood within the limits of the design. The study is based on a purposive sample, cross-sectional self-report data, and a large-enterprise setting, which restricts causal inference and broader generalisation. Overall job satisfaction was measured with a single global item, and the subgroup analyses relied on uneven category sizes. The wider analytical context is also relevant, because an earlier publication based on the same survey programme showed that psychological safety and job satisfaction were strongly correlated, but this association did not remain significant after controlling for employee engagement. The present article should therefore be treated as a focused analysis of the psychological safety and job satisfaction relationship, not as evidence of a fully independent causal path.

The study points to psychological safety as a practically relevant correlate of overall job satisfaction in large enterprises, especially where employees experience low social cost in seeking help and clear recognition of their distinctive value. For managers, the main implication is that job satisfaction may be strengthened not only through formal job design, but also through daily relational conditions that make work feel respectful, supported, and worth doing.

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FACTORS DETERMINING THE ACCEPTANCE OF ARTIFICIAL INTELLIGENCE-BASED TOOLS IN TEACHERS' TEACHING WORK

Sławomir RADOMSKI

University of Gdańsk, Faculty of Management, Sopot; slawomir.radomski@ug.edu.pl,
ORCID: 0000-0001-5880-2274

Purpose: This article presents the results of research into the acceptance of artificial intelligence (AI) in teachers' teaching practice. The aim of this study is to identify the factors influencing teachers' acceptance of AI tools in their daily teaching practice and to justify the applicability of a modified UTAUT model to such analyses.
Design/methodology/approach: The study was based on an original model that incorporated constructs from recognised and widely used models such as UTAUT, SCT and IDT. The study was conducted in five schools – three secondary schools and two primary schools. A total of 61 teachers from various subject areas took part in the study, representing a range of professional experience and levels of digital competence. Correlational analyses were carried out using the partial least squares (PLS) method. Calculations were performed using Excel and the SmartPLSv4 application.
Findings: The results show that effort expectancy (EE) and performance expectancy (PE) are key factors influencing teachers' acceptance of AI.
Research limitations/implications: Future research should focus on the continuous improvement of measurement models and their adaptation to the environment under study.
Practical implications: The findings may have practical implications for those who design and manage educational processes.
Social implications: Raising awareness of how various factors influence the behaviour of users of IT systems.
Originality/value: The article analyses the factors influencing software acceptance, which is of significance to management and quality sciences.
Keywords: technology acceptance, artificial intelligence in education, TAM, UTAUT, education.
Category of the paper: Research paper.

1. Introduction

Modelling technology acceptance is a key aspect of research into the factors determining users' choice of IT tools. Teachers' acceptance of technology is a key factor in the successful implementation of AI-based solutions in education. Teachers often act as decision-makers, organisers of the teaching process, and intermediaries between technology and the student.

The literature indicates that teachers' decision-making mechanisms differ from those characteristic of pupils and students, as teachers evaluate technology primarily through the prism of its impact on the organisation of teaching work, the ability to control the teaching process, and compatibility with their pedagogical role, whilst pupils and students focus mainly on the direct usefulness and convenience of using the tools. Thus, this study should be regarded as a complement to earlier analyses of AI acceptance by pupils and students (Radomski, 2025, p. 269).

Several significant theories of technology acceptance can be identified in the literature. One of the most important, most frequently used and cited models of technology acceptance is the Technology Acceptance Model (TAM) proposed by Davis (1989). In the TAM model, two key factors – perceived usefulness (PU) and perceived ease of use (PEOU) – influence the user's attitudes and intentions regarding the use of technology (Davis, 1989, p. 20). Research based on TAM indicates that high levels of usefulness and ease of use increase the acceptance and effectiveness of technological tools in education.

An extension of the TAM model is the Unified Theory of Acceptance and Use of Technology (UTAUT), developed by Venkatesh (2003). UTAUT combines elements from several earlier theories, including TRA (theory of reasoned action), TPB (theory of planned behavior) and TAM, introducing four main constructs: performance expectancy, effort expectancy, social influence and facilitating conditions. The UTAUT model also takes into account moderating variables such as age, gender and experience, making it a comprehensive tool for analysing technology acceptance across different demographic groups (Venkatesh et al., 2003, p. 25). Subsequent modifications, such as UTAUT 2 and UTAUT 3, introduced new constructs such as hedonic motivation, value-for-money, and habit, which are particularly useful in research on consumer technologies (Venkatesh et al., 2003, p. 29). UTAUT 3 also added the element of personal innovativeness in technology use as a factor that supports the acceptance of new IT solutions (Farooq et al., 2017, p. 30).

There are numerous studies incorporating new constructs from earlier models to predict user behaviour even more accurately (Blunt, Chong, Tsigna, Zayyad, Tsigna, Venkatesh, 2022, p. 17; Radomski, 2017, p. 110). The construct of trust in a given technology has also long been analysed in numerous studies on technology acceptance (Alharbi, 2014, p. 132; Rajasingham, Premarathne, 2018, p. 3; Chen, Fan, Azam, 2024, p. 129).

The constructs proposed in this study to extend the UTAUT model: self-efficacy and facilitating conditions are not new variables, but derive directly from classic technology acceptance models: Bandura's Social Cognitive Theory (SCT) (Bandura, 1986) and Venkatesh's UTAUT (2003), and their significance in the context of teachers has been confirmed in recent research on the acceptance of AI in education (Bergdahl, Sjöberg, 2025).

2. Acceptance of AI tools in education

Recent research on the use of artificial intelligence (AI) tools in education provides important insights into the potential benefits and challenges affecting their acceptance. An example of such research is the study by Almogren, Al-Rahmi and Dahri (2024). The results of the analysis showed that perceived ease of use and perceived usefulness are significant predictors of users' attitudes towards AI tools in education.

Another study (Kuruliszwili, 2025, p. 49) shows that teachers' acceptance of AI is conditional and depends primarily on the type of teaching task, the level of control over the tool, and trust in its operation. Teachers are inclined to use AI for technical, repetitive and objective tasks, whilst showing a clear reluctance towards applications requiring interpretation, empathy and pedagogical context. At the same time, respondents emphasise the need to be able to verify and correct results generated by AI, which highlights the importance of trust and a sense of control. Another key finding is that the low uptake of AI by teachers does not stem from a negative attitude, but from a lack of competence, experience and organisational support within the school environment. These findings provide strong empirical justification for including constructs such as trust, performance expectancy, expected effort, social influence and facilitating conditions in the proposed model, as it is precisely these factors that determine teachers' actual readiness to use AI tools.

Research (Ching, Jamaludin, 2025, p. 564) indicates that perceived usefulness and perceived ease of use are key to the adoption of AI, as they shape the teacher's attitude towards the technology and their intention to use it. At the same time, they emphasise the role of external variables, such as self-efficacy, digital competence and social norms within the work environment, which indirectly influence the assessment of perceived usefulness and perceived ease of use. The article also highlights the importance of ethical issues, data security and the transparency of algorithms, which are linked to building trust in AI. This analysis provides a theoretical justification for the application of the modified UTAUT model in research on teachers, as it allows the TAM constructs to be directly translated into expected outcomes, expected effort, social influence, self-efficacy and enabling conditions, and also highlights the need to consider trust as a key factor in the acceptance of AI in education.

Other authors (Boughanzai, Ouhassan, Majdoubi, 2025, p. 847; Amouri, Haroud, Ouchaouka, 2025, p. 9; Tang, Zhong, 2026, p. 6) propose in their analyses the use of constructs related to the TAM and UTAUT models, as well as trust, to investigate the acceptance of AI tools in education.

3. Research model

The proposed model identifies six key constructs relevant to the analysis of teachers' acceptance of artificial intelligence tools in the teaching process:

- performance expectancy (PE) – this construct is derived from the TAM and UTAUT models and refers to teachers' belief in the usefulness of AI-based tools in their daily teaching work. In the context of research on AI among teachers, it refers to an assessment of whether the use of such tools improves the preparation of materials, the marking of students' work, the organisation of lessons, and the overall effectiveness of the teaching process. The belief in the real benefits of using AI plays a key role in shaping the acceptance of technology in the school environment (Davis, 1989, p. 320; Glikson, Woolley, 2020, p. 628);
- effort expectancy (EE) – a construct defined as the level of perceived difficulty associated with mastering and using a given system. Derived from the UTAUT model, it is frequently used in research on the acceptance of educational tools. In relation to teachers using AI, this refers to the extent to which the tools are intuitive, understandable and do not require a significant time investment to learn, which directly influences their willingness to use them in teaching practice;
- social influence (SI) – a construct derived from the UTAUT theory, emphasising the importance of social factors in the process of technology acceptance. In the context of teachers, this refers to the influence of the school environment, the opinions of colleagues and the school management, and the general organisational climate on the decision to use AI in teaching (Sahu, Padhy, Dhir, 2020, p. 147);
- facilitating conditions (FC) – this construct derives directly from the UTAUT model and refers to the user's belief that the organisational and technical infrastructure exists to enable the effective use of a given technology (Venkatesh et al., 2003, p. 453). In the context of teachers' work, this means access to appropriate equipment, technical support, time, training, and a school environment that is receptive to the use of AI tools. Research on the acceptance of artificial intelligence in education indicates that the lack of such conditions constitutes one of the main barriers to the actual implementation of the technology by teachers, even when they have a positive attitude towards AI. Favourable conditions therefore play a significant role in shaping teachers' readiness to use AI-based tools, as they determine the possibility of the practical application of

technology in the teaching environment (Venkatesh et al., 2003, p. 453; Ching, Jamaludin, 2025, p. 571);

- self-efficacy (SE) – this construct derives from social-cognitive theory and was introduced by Bandura as an individual's belief in their ability to perform a specific action effectively (Bandura, 1986, p. 391). In technology acceptance models, self-efficacy appears as a significant external variable influencing the perceived ease of use and usefulness of information systems (Venkatesh, Bala, 2008, p. 276). With regard to teachers using AI tools, this implies the belief that they possess sufficient digital competence and skills to effectively utilise the technology in their teaching practice. Research on the acceptance of AI in education indicates that a low level of self-efficacy is one of the main reasons for reluctance to use new tools, even if they are perceived as useful (Bergdahl, Sjöberg, 2025, p. 6). Self-efficacy therefore plays a key role in shaping teachers' acceptance of AI, as it influences their readiness to undertake actions related to the use of technology in school practice (Bandura, 1986, p. 391; Ching, Jamaludin, 2025, p. 49);
- trust (TR) – this construct was introduced into research on the acceptance of information systems by, amongst others, Cody-Allen and Kishore (2006) and refers to the user's sense of security and the reliability of the technology. In the context of research into teachers' use of AI tools, trust is defined as the degree of conviction that AI-based solutions operate in a predictable, transparent and secure manner, and that their use does not entail the risk of losing control over the teaching process or threats associated with the system's algorithmic operation. Trust plays a significant role in shaping the acceptance of AI, as it determines teachers' willingness to use the technology in their daily school practice.

Based on the above six factors and the acceptance of AI, six research hypotheses have been proposed, as shown in the figure below.

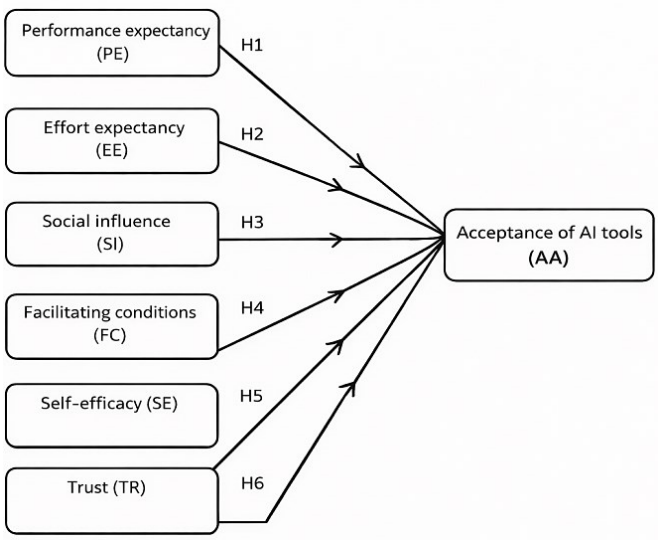

Figure 1. Research model.

Source: the authors' own development.

Based on the above figure, six hypotheses were formulated:

H1: There is an effect of performance expectancy on acceptance.

H2: There is an effect of effort expectancy on acceptance.

H3: There is an effect of social influence on acceptance.

H4: There is an effect of facilitating conditions on acceptance.

H5: There is an effect of self-efficacy on acceptance.

H6: There is an effect of trust on acceptance.

4. Description of the research procedure and questionnaire design

The questions defining the individual constructs were prepared in accordance with previous studies (Davis, 1989, p. 336; Rogers, 2003, p. 340) and adapted to the educational context. Respondents rated their subjective level of agreement on a seven-point Likert scale (1 – strongly agree, 7 – strongly disagree). The seven-point scale was also used in many other studies on similar topics (Venkatesh, Morris, Davis, Davis, 2003, p. 425). Table 1 presents the questionnaire items that serve as indicators of the model's constructs:

Table 1.
Construct indicators

Performance expectancy (PE)
PE1: AI tools help me streamline the preparation of teaching materials. PE2: Using AI makes my teaching more effective. PE3: AI enables me to complete teaching-related tasks more quickly.
Effort expectancy (EE)
EE1: I find AI tools easy and intuitive to use. EE2: Learning to use AI doesn't take much effort on my part. EE3: I don't find using AI difficult during lessons.
Social influence (SI)
SI1: In my school environment, the use of AI tools is encouraged. SI2: My colleagues have a positive attitude towards the use of AI in teaching. SI3: The school management supports the use of AI in teaching.
Facilitating conditions (FC)
FC1: I have access to the necessary equipment and infrastructure to use AI. FC2: The school provides me with technical support for using AI. FC3: I have the opportunity to take part in training courses on AI.
Self-efficacy (SE)
SE1: I have sufficient skills to use AI tools. SE2: I feel confident using AI in my teaching. SE3: I am able to resolve issues relating to the use of AI independently.
Trust (TR)
TR1: I trust the results generated by AI tools. TR2: I feel in control of how AI tools work. TR3: I believe that using AI is safe in teaching.
Acceptance of AI (AA)
AA1: I intend to use AI tools regularly in my teaching. AA2: I would recommend the use of AI to other teachers.

Source: the authors' own development.

The study was conducted using the partial least squares (PLS) method. The calculations were performed using Excel and the SmartPLSv4 application. The PLS method was used to evaluate the measurement model in order to assess the reliability and correlations between constructs and their indicators.

The study population consisted of teachers from five schools (two primary and three secondary) in the Pomeranian Voivodeship. The research was conducted in October 2025 using an online questionnaire distributed among teachers at the respective schools. The group was selected at random.

The questionnaire comprised 27 questions divided into two sections. The first section consisted of questions regarding basic information about the respondent. The following variables were examined: gender, experience, self-assessment of digital competences, type of school, subject taught, and examples of the use of AI applications in education.

In the second section of the questionnaire, respondents were asked to indicate their feelings regarding the research model. The questions (indicators) in this section were divided into seven groups reflecting the remaining variables of the research model. The first three questions concerned the expected performance (EP) variable, whilst the next three reflected expected effort (EE). The subsequent groups, each consisting of three questions, concerned, respectively: social influence (SI), facilitating conditions (FC), self-efficacy (SE) and trust (TR). Two indicators were prepared for the AI acceptance (AA) factor.

5. Research results

The questionnaire was correctly completed by 61 teachers who used artificial intelligence software in their work. The majority of respondents were women (n = 50, 82%). The respondents were mostly young teachers with less than 20 years' professional experience, totalling 40 people (65%). However, it cannot be said that AI is the preserve of young teachers, as six (11%) were teachers with over 30 years' professional experience. Most teachers rate their IT skills as good (n = 27, 44%) or very good (n = 21, 36%). Only 20% of respondents consider their IT skills to be poor. The majority of respondents work in secondary schools (n = 36, 59%). 41% of respondents work in primary schools. The teachers surveyed taught a wide variety of subjects, but the largest number taught English (n = 15, 25%), IT (n = 10, 16%) and mathematics (n = 7, 11%). The most frequently cited examples of software used in teaching were ChatGPT (n = 55, 90%), Quizzlet (n = 19, 31%) and Duolingo (n = 16, 26%). The table below presents the demographic profile of the respondents:

Table 2.
Demographic profile of respondents

Variable	Category	n (%)
Gender	Female	50 (66)
	Male	11 (34)
Experience	<10	22 (36)
	10-20	18 (29)
	20-30	15 (24)
	>30	6 (11)
Self-assessment of digital skills	Poor	12 (20)
	Good	27 (44)
	Very good	21 (36)
Type of school	Primary	25 (41)
	Secondary	36 (59)
Subject taught	English	15 (25)
	IT	10 (16)
	Mathematics	7 (11)
Examples of software	ChatGPT	55 (90)
	Quizzlet	19 (31)
	Dualingo	16 (26)
Most common uses	Preparing teaching materials	48 (79)
	Adapting content to the student's level	35 (57)
	Step-by-step explanation of tasks	26 (43)

Source: the authors' own development.

6. Evaluation of the measurement model

To identify the factors influencing the acceptance of AI tools used in education, reliability and validity tests were conducted for each model relationship. As shown in Table 3, all construct reliability (CR) and Cronbach's alpha (CrA) coefficients were above the recommended minimum threshold of 0.7. The construct reliability (CR) ranged from 0.846 to 0.955, and Cronbach's alpha from 0.736 to 0.834. This indicates good internal consistency among the measurement items in the model structure.

Table 3.
Modelling structural equations

Construct	Question	CrA	CR
Performance expectancy	PE1	0,772	0,916
	PE2		
	PE3		
Effort expectancy	EE1	0,834	0,856
	EE2		
	EE3		
Social influence	SI1	0,736	0,911
	SI2		
	SI3		

Cont. table 3.

Facilitating conditions	FC1	0,821	0,884
	FC2		
	FC3		
Self-efficacy	SE1	0,766	0,846
	SE2		
	SE3		
Trust	TR1	0,801	0,913
	TR2		
	TR3		
Acceptance of AI	AA1	0,821	0,955
	AA2		

Source: the authors' own development.

7. Evaluation of the conceptual model

In the next stage, the structural model was evaluated using path coefficients. Table 4 presents the results of the PLS-SEM analysis performed using the SmartPLSv4 software. The main indicator is the path coefficient (β), which determines the 'strength' of the influence of one construct on another, as shown in Figure 1. The variance inflation factor (VIF) was estimated to assess multicollinearity. This is an indicator that checks whether the model variables are similar to one another and measure the same phenomenon. As shown in Table 4, all VIF values fall within the range of 1.734-3.243, and are therefore below the most commonly accepted threshold of 5, indicating no multicollinearity issue between the constructs and allowing the path coefficients to be interpreted as robust. At the same time, all relationships are statistically significant ($T > 1.96$; $p < 0.05$), meaning that each of the constructs analysed makes a significant contribution to explaining teachers' acceptance of AI. All hypotheses (h1-h6) have been positively verified.

Table 4.
Evaluation of the structural model

Hypothesis	Model relationships	Path coefficient, β	VIF	T-statistic	p-value	Hypothesis testing
H1	PE→AA	0,815	2,457	2,357	< 0,05	positive
H2	EE→AA	0,836	1,734	3,367	< 0,001	positive
H3	SI→AA	0,627	3,243	2,689	< 0,01	positive
H4	FC→AA	0,738	2,693	2,456	< 0,05	positive
H5	SE→AA	0,661	2,732	2,459	< 0,05	positive
H6	TR→AA	0,756	3,014	3,156	< 0,01	positive

Source: the authors' own development.

The strongest influence on AI acceptance (AA) is exerted by expected effort (EE→AA: $\beta = 0.836$; $T = 3.367$; $p < 0.001$) and expected performance (PE→AA: $\beta = 0.815$; $T = 2.357$; $p < 0.05$). This shows that, for teachers' readiness to use AI tools, it is crucial that they perceive these tools as both easy to use and capable of delivering tangible benefits in teaching. High path

coefficients for trust (TR→AA: $\beta = 0.756$; $T = 3.156$; $p < 0.01$) and facilitating conditions (FC→AA: $\beta = 0.738$; $T = 2.456$; $p < 0.05$) confirm that acceptance of AI is strongly conditioned by a sense of security and the reliability of the technology, as well as the availability of organisational and technical support (e.g. equipment, training and school support). Moderately strong but still significant correlations were found for self-efficacy (SE→AA: $\beta = 0.661$; $T = 2.459$; $p < 0.05$) and social influence (SI→AA: $\beta = 0.627$; $T = 2.689$; $p < 0.01$), suggesting that teachers' competence confidence, as well as the organisational climate and pressure (or acceptance) of the school environment, support the decision to use AI, but are less significant than ease of use, perceived benefits and trust. The results confirm the validity of the modified UTAUT model in a study of teachers, pointing to the dominant role of efficacy and utility factors (EE, PE) as well as implementation and safety conditions (TR, FC) in shaping the acceptance of AI tools in teaching practice.

8. Opportunities for future research

This study was pilot in nature, and the results obtained indicate that the proposed model may serve as a starting point for in-depth research into the acceptance of artificial intelligence among teachers. In further research, it seems reasonable to expand the sample, which would increase the generalisability of the results. An interesting avenue of inquiry could be to investigate the types of teaching tasks in which teachers accept the use of AI and those in which they show clear resistance, which would allow for a better understanding of the practical context in which constructs such as trust, performance expectancy or self-efficacy operate. This model could also be used to investigate differences among teachers based on their specialism, years of service and level of digital competence, which would enable a more precise identification of which factors most strongly determine the acceptance of AI within specific professional groups of teachers.

9. Summary

The research conducted on the acceptance of artificial intelligence (AI-based) tools in teachers' teaching practice indicates the significant potential of AI tools in teachers' teaching practice. Unfortunately, this research does not show what percentage of teachers use such tools in their work, which would also be very interesting. The results obtained demonstrate that effort expectancy (EE) and performance expectancy (PE) - (H1, H2), are key factors influencing teachers' acceptance of AI tools. This means that teachers are inclined to use such tools

primarily when they perceive them as easy to use and as genuinely improving the organisation of teaching work, the preparation of materials and the assessment of students' work. These findings are consistent with previous research on the acceptance of technology in education, which highlights the dominant role of usability and ease of use in the process of adopting new technological solutions.

High path coefficients were also obtained for the relationships: H6: TR→AA and H4: FC→AA, indicating that trust in technology and conditions conducive to its use are of significant importance in the process of teachers' acceptance of AI. This means that teachers not only recognise the benefits of using AI, but also feel a sense of security and control over the operation of the tools, and perceive organisational and technical support from the school. Social influence (SI) and self-efficacy (SE) – (H3, H5), also proved statistically significant, suggesting that the school environment and teachers' belief in their own digital competences support the decision to implement AI in teaching practice, although their significance is slightly lower than that of the EE and PE factors.

Research indicates that artificial intelligence can serve as a tool to support teachers in organisational, analytical and preparatory tasks, such as creating materials, generating tasks, analysing pupils' work or personalising teaching. AI is not seen as a replacement for the teacher, but as a tool that relieves them of technical tasks, allowing them to focus on pedagogical and educational aspects. The results obtained confirm the validity of applying the modified UTAUT model in acceptance studies among teachers.

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THE USE OF MICRO-CREDENTIALS IN THE PROFESSIONAL DEVELOPMENT OF HEALTHCARE WORKERS ON THE EXAMPLE OF THE PROFESSIONAL GROUP OF MEDICAL SECRETARIES

Agnieszka ROGALSKA[1*], Łukasz KOSIŃSKI[2]

[1] Dr Jan Biziel University Hospital No. 2 in Bydgoszcz, Hospital Management Board; agnieszka.rogalska@biziel.pl, ORCID: 0009-0004-2983-468X
[2] Dr Jan Biziel University Hospital No. 2 in Bydgoszcz, Hospital Management Board; lukasz.kosinski@biziel.pl, ORCID: 0000-0003-4923-5604
* Correspondence author

Purpose: The aim of this article is to identify and evaluate the potential of micro-credentials as a tool supporting the development of healthcare professionals' competencies. The study analyses the pilot implementation of a micro-credential system in a Polish healthcare organization and its use in designing a career pathway for medical secretaries. The analysis covers organizational and competence-related conditions, as well as potential benefits for the institution and its staff. An original element is the formulation of practical recommendations for other healthcare organizations, derived directly from the pilot experience.
Design/methodology/approach: This is a qualitative study conducted as a case study. The analysis focuses on designing and implementing a micro-credential system at Dr Jan Biziel University Hospital No. 2 in Bydgoszcz. The empirical material comprises the analysis of organizational documents, observation of the implementation process, and reflections from the implementation team. The study focuses on identifying competence needs, designing career pathways, and methods of validating competences using digital micro-credentials compliant with the Open Badges standard.
Findings: The results of the pilot scheme indicate that micro-credentials can serve as an effective tool for competence management within healthcare organizations. Their implementation has made it possible to streamline the career development path for medical secretaries, increase the transparency of competence assessment criteria, and boost staff motivation to acquire new skills. An additional outcome was greater standardization of work, as well as improved planning of training and the induction of new staff.
Research limitations/implications: The study is based on a single pilot case, which limits the extent to which the findings can be generalized to the entire healthcare sector. Furthermore, observations regarding the impact of micro-credentials on the quality of patient care require further quantitative analysis.
Originality/value: This article presents the first case in Poland of the practical application of micro-credentials within a healthcare organization and proposes a model for their use in the competence management of administrative staff in the medical sector. Based on the experiences of the pilot scheme, recommendations have also been formulated for other institutions planning similar implementations.

Keywords: micro-credentials, professional development, healthcare, competencies, career pathway.
Category of the paper: case study.

1. Introduction

The healthcare sector is one of the most diverse sectors of the labour market – both in terms of the range of services provided and the structure of employment. It comprises highly formalized professions, the practice of which requires specific education, passing a state examination and, often, registration with the relevant professional body. This applies, for example, to doctors, nurses and midwives, physiotherapists and pharmacists (Paszkowska, 2024; Kolankiewicz, 2024; Górski, Grassmann, Sarnacka, 2019). At the same time, healthcare organizations employ numerous professionals performing administrative and support roles whose competency requirements are less clearly defined.

In this context, the distinction between qualifications and competences takes on particular significance. Qualifications refer to formally recognized learning outcomes, such as diplomas or certificates of course completion. Competences, on the other hand, encompass the ability to apply knowledge and skills in practice. In the rapidly changing healthcare environment – shaped by digitalization, regulatory changes, rising patient expectations and the growth of interdisciplinary work – it is competences that largely determine the quality of care and organizational efficiency. Competency management enables a better match between staff and their professional roles, the creation of clear career pathways, the reduction of staff turnover and the enhancement of patient safety; from an employer's perspective, it facilitates more effective human resource management and the implementation of innovative organizational solutions.

The problem of poorly defined responsibilities is particularly evident in administrative roles within the healthcare sector. One such role is that of the medical secretary, whose importance – in the context of the digitalization of the healthcare system, support for medical staff, and patient contact – is steadily growing. Despite the significant importance of this role in the day-to-day operations of healthcare providers, the legal regulations governing this profession remain limited. In the Polish legal system, the primary reference is the Regulation of the Minister of Family, Labour and Social Policy of 21 October 2025 on the classification of occupations and specializations for the purposes of the labour market (2025) which assigns this position the occupation code 334402, as well as the Regulation of the Minister of Health of 10 July 2023 on the qualifications required of employees in specific types of posts in healthcare entities that are not commercial undertakings (2023). This document sets out the minimum qualification requirements at secondary education level and appropriate vocational

training, with at least five years professional experience required for the post of senior medical secretary.

These formal regulations are supplemented by job descriptions available via the Job Description Search Engine on the Public Employment Services Portal (psz.praca.gov.pl, 2026), and materials developed as part of the InfoDoradca+ project (psz.praca.gov.pl, 2026). These outline the wide range of duties of a medical secretary, including maintaining medical records, operating IT systems, organising the work of a clinic or ward, communicating with patients and cooperating with medical staff. The importance of soft skills, such as communication, resilience to stress, accuracy and responsibility, is also emphasised. At the same time, the lack of detailed competency standards means that requirements for staff may vary between organisations, and even between organisational units within the same institution, which makes it difficult to establish consistent career development pathways and to objectively assess readiness for work.

Micro-credentials are the response to the need for a more flexible and transparent way of validating skills. They can be defined as digital documents confirming the achievement of specific learning outcomes in a given competence area, most often obtained through short, modular forms of education whilst maintaining clearly defined assessment criteria and verification options (Mitchel, 2025). This solution aligns with the concept of lifelong learning and the growing need for flexible documentation of competences in the context of dynamic changes in the labour market. Micro-credentials can be collected in a user's digital portfolio, which enhances their usefulness in recruitment processes and in documenting professional development, as well as enabling the presentation of skills in a digital environment. According to Min-Sui (2025), individuals holding micro-credentials demonstrate 62% greater visibility of their competences to employers and receive 41% more new job offers. A key element of the credibility of micro-credentials is a technical standard that enables their verification. One of the most widely used solutions is the Open Badges standard, which allows metadata regarding the issuer, assessment criteria and verified competences to be embedded within a digital badge (Michalik, Felczak, 2022). As a result, a micro-credential becomes not only a symbol of achievement, but also a carrier of transparent information about the learning process in a unified, international standard (Lok, 2022).

In the Polish context, the Educational Research Institute – a state research institute – plays a significant role in the development of this approach through its systemic project „Micro-credentials – a pilot of a new solution supporting lifelong learning" (https://ibe.edu.pl/pl/opis-projektu-mikroposwiadczenia, 2026). Its aim is to develop standards for the design, issuance and collection of micro-credentials, and to verify their practical usefulness in formal and non-formal education. A key element of the pilot is the Odznaka+ app, a tool for issuing and storing digital badges compliant with the Open Badges standard (https://odznakaplus.ibe.edu.pl, 2026). Each badge contains a set of metadata including, amongst other things, a description of competences and learning outcomes, criteria for their

verification, information about the issuing institution, the date of issue, and the badge's graphic identification (Nowakowski, Stęchły, 2021). This solution forms part of a broader concept of creating reliable methods for documenting competences, which can complement traditional qualifications and support individual career development paths (Gamrat, Zimmerman, 2021).

The case study describing the experiences of Dr Jan Biziel University Hospital No. 2 in Bydgoszcz, which took part in a pilot project run by the Educational Research Institute – National Research Institute (IBE-PIB), concerning the use of micro-credentials as a tool for verifying competences and building a career development pathway for medical secretaries, highlights the possibility of implementing a system that would manage the career development of this group of employees and enable a more objective assessment of their competences. An innovative aspect of the presented research is the experience gained from the pilot project and the practical recommendations formulated on this basis for other healthcare providers, which may support improvements in the quality of patient care and organisational efficiency.

2. Methods

This article employs a qualitative research approach based on the case study method. The subject of the analysis is the case of Dr Jan Biziel University Hospital No. 2 in Bydgoszcz, which was the first healthcare institution in Poland to implement a micro-credential system in the process of competence management and career development planning for medical secretaries. This implementation was carried out as part of a nationwide pilot project led by the Educational Research Institute – a State Research Institute, the aim of which was to test the potential for using micro-credentials in various sectors of the labour market.

The research process comprised three main stages.

The first stage was a competence needs assessment, the aim of which was to identify the actual competence requirements associated with performing the role of a medical secretary. As part of this stage, an analysis was carried out of the organisational and management documents in use at the healthcare facility, including strategic documents, internal regulations, job descriptions and role specifications. A key element of the analysis was a comparison of formally defined job duties with the tasks actually performed in medical secretariats, which enabled the identification of areas requiring clarification or supplementation in the competency model.

The second stage involved developing a professional development model comprising a four-stage career path for medical secretaries. Based on the findings of the assessment, a set of micro-credentials was defined, corresponding to successive levels of professional development and linked to specific professional competencies and organisational requirements arising from the specific nature of the healthcare provider's operations.

The third stage involved a pilot implementation of the designed solution and the monitoring of the process for validating employees' competences. This process utilised digital badges compliant with the Open Badges standard, enabling the digital documentation of acquired competences. The awarding and management of micro-credentials was carried out using the Odznaka+ application, an IT tool supporting the implementation of micro-credential systems.

The empirical material used in the study comprised several complementary sources of qualitative data. The analysis was based on project documentation relating to the implementation of micro-credentials, including materials concerning the career development pathway for medical secretaries and the tools used in the process of assessing and validating staff competencies. An additional source of data was the observation of the system's implementation process within the hospital's organisational environment, expert consultations with members of the implementation team, and the authors' experiences resulting from their direct involvement in the pilot project.

The use of the case study method enabled an in-depth analysis of the process of designing and implementing an innovative solution within the specific organisational context of a healthcare provider. This allowed for the identification of factors conducive to the implementation of the micro-credential system, as well as the organisational and competence-related barriers associated with this process. The results obtained formed the basis for formulating conclusions and practical recommendations regarding the potential use of micro-credentials in the management of healthcare sector staff competencies.

3. Case study description and Results

3.1. Needs assessment and Project Baseline

The project to introduce micro-credentials as a tool to support the professional development of medical secretaries began with an in-depth analysis of the organisation's competency needs. The diagnostic phase involved an analysis of the tasks actually performed by medical secretaries, taking into account differences between individual organisational units, the identification of critical points in the patient care process, an assessment of information security requirements, and an analysis of the digital skills necessary to work with the IT systems in operation at the hospital.

The assessment carried out showed that micro-credentials can fulfil three complementary functions within an organisation. Firstly, a validation function, providing reliable proof of specific competencies. Secondly, a development function, enabling the establishment of a clear pathway for employees' further professional development. Thirdly, a management function, supporting human resource management through the planning of competence development, training and potential promotions.

In order to put the agreed principles into practice, the Director issued an order establishing the Hospital Staff Competency Mapping Team (Director of the University Hospital No. 2, 2025a). The team analysed staff records, including job descriptions and scope of duties, and subsequently developed a preliminary career development model aimed at making more effective use of staff potential. The principles of a responsible HR policy, encompassing transparency in recruitment and promotion processes, access to professional development programmes, and the systematic enhancement of staff competencies, were simultaneously incorporated as one of the operational objectives into the Hospital's Strategic Plan for 2025-2030 (Rector of NCU, 2025; Director of the University Hospital No. 2, 2025b).

One of the key conclusions drawn from the analysis was the need to integrate the team of medical secretaries under a single organisational structure. This solution enables systematic management of skills development, training planning, the implementation of work standards, and the streamlining of the onboarding process for new employees.

3.2. Designing the professional development pathway

A key outcome of the team's work was the design of a four-stage career development pathway for medical secretaries, which clarifies competency expectations and facilitates training planning and progress assessment.

Stage I – Junior Medical Secretary (induction, up to 12 months).

Objective: induction, system basics, safety, communication and digital fundamentals.

Stage II – Medical Secretary (independence, approx. 2-5 years).

Objective: full independence in document handling and IT systems, and in patient care.

Stage III – Senior Medical Secretary (complex tasks, supporting others).

Objective: greater responsibility, improvement initiatives, reporting, handling difficult situations.

Stage IV – Senior Medical Secretary – Mentor (developmental role, work standards).

Objective: mentoring, training new staff, designing efficiency-enhancing solutions, establishing work standards.

In parallel with the development of the career progression pathway, new job description sheets and new templates for job descriptions were drawn up, ensuring compliance with applicable legislation and internal regulations (Director of the University Hospital No. 2, 2025c).

A key objective of the project was to create an inclusive model that would support both new recruits and staff with many years of professional experience. As a result, the solution can serve as a common framework for competence development — facilitating the adaptation of new staff whilst organising and validating the competencies of experienced staff. In line with the participatory working model preferred by the Hospital Management Board, the developed career development pathway, requirements and supplementary documents were consulted with a team comprising four employees holding the position of medical secretary/senior medical

secretary, all with many years of experience. On the one hand, this allowed the developed model to be tested against the day-to-day practice of those in such roles; on the other hand, it secured the first advocates for the planned change, in line with change management theory.

3.3. Competency assessment and definition of micro-credentials

In the next stage of the project, work began on defining a set of micro-credentialss corresponding to the four stages of a medical secretary's professional development. Each micro-credential was described in a systematic manner, in accordance with the templates provided by IBE-PIB – the required skills, methods of verification, estimated workload, types of acceptable evidence and quality assurance principles were specified. It was agreed that each level of development would be validated by a set of four key competences (badges), which together form a coherent job profile.

Micro-credential: JUNIOR MEDICAL SECRETARY

1. Explains the basics of how the healthcare system in Poland works.
2. Maintains records in IT systems at a basic level.
3. Administers first aid.
4. Communicates with patients and staff using a variety of methods and techniques in accordance with applicable legislation, including the area of personal data protection – basic level.

Micro-credential: MEDICAL SECRETARY

1. Applies legislation and quality standards applicable in healthcare in practice.
2. Archives medical records.
3. Works independently in IT systems.
4. Communicates with patients and staff using a variety of methods and techniques in accordance with applicable legal regulations, including those relating to personal data protection – advanced level.

Micro-credential: SENIOR MEDICAL SECRETARY

1. Implements improvement measures within their role and across the entire facility.
2. Carries out reporting and analytical tasks relating to the unit's activities, as well as accounting processes.
3. Carries out public relations activities and promotes the facility's brand.
4. Has the ability to resolve difficult and conflictual situations in relations with patients and staff.

Micro-credential: SENIOR MEDICAL SECRETARY – MENTOR

1. Manages the implementation of the medical secretary's career development pathway.
2. Plans and implements activities supporting professional development.
3. Develops their own mentoring and professional competencies.
4. Provides mentoring and gives constructive feedback.

A key principle of the adopted model was to move away from treating participation in training as sufficient proof of competence development. Instead, the focus was on verifying actual learning outcomes. Depending on the type of competence, methods used included work observation, assessment interviews, knowledge tests, practical exams, simulations of professional situations, and monitoring of professional activity. This approach is consistent with the concept of micro-credentials, which are awarded only after clearly defined quality criteria have been met and the learning outcomes achieved have been confirmed. A digital visualisation of the micro-credentials obtained is shown in Figure 1.

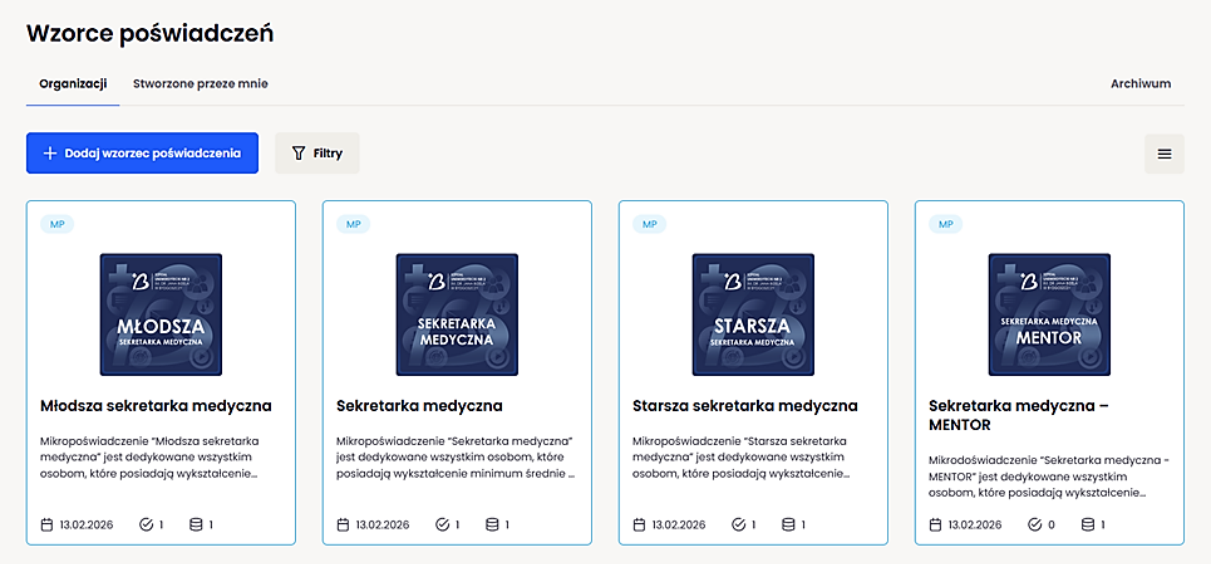

Figure 1. The digital visualization of obtained micro-credentials.

Source: Hospital materials available in the application https://odznakaplus.ibe.edu.pl/

3.4. Implementation experiences and organizational observations

Once the micro-credentials had been defined and approved by IBE-PIB, the actual implementation phase began, involving the validation of staff competences using digital badges. This process marked the transition from the design phase to the operational phase and involved the verification of learning outcomes, the documentation of achievements, and the creation of individual staff competence profiles.

To ensure organisational consistency, an annual schedule for confirming the competences of medical secretariat staff was drawn up, enabling the process to be spread out over time and linked to the organisation's training plan.

An analysis of organisational experiences reveals that the micro-credential system has an impact both on the individual level of staff and on the functioning of the entire organization. These observations are consistent with previous studies highlighting the role of micro-credentials as flexible tools supporting the documentation of learning outcomes and lifelong learning in dynamic professional environments (Oliver, 2019).

At an individual level, the increase in employees' awareness of their own competencies was particularly evident. Participants in the process began to identify their skills more clearly and recognise their importance in carrying out their day-to-day work tasks. At the same time, professional development ceased to be viewed as a series of random training courses and began to function as a structured and plannable process. Clearly defined criteria for the validation of competences and the possibility of obtaining digital confirmation of learning outcomes helped to increase motivation for professional development and fostered a better understanding of the organisation's expectations for a given role. Consequently, the process of learning and upskilling has become more structured and linked to the organisation's actual needs. Similar effects have been described in earlier research, which indicates that micro-credentials can strengthen learner agency and support continuous professional development through transparent recognition of competencies (Brown et al., 2021; Gallagher, 2018).

The results of the pilot scheme also point to significant organisational implications of implementing micro-credentails. The use of uniform criteria for confirming competence has contributed to greater standardisation of the work of medical secretariats and the harmonisation of expectations of staff. The introduction of clearly defined assessment criteria and a schedule for confirming competence has made it possible to move away from ad hoc, discretionary assessments in favour of a more systematic approach to staff development. This has increased the transparency of human resource management processes, reducing the discretionary nature of assessments and strengthening the sense of organisational fairness. Clearly defined competency requirements, linked to specific stages of professional development, have also streamlined the process of onboarding new employees. In practice, the induction period has been shortened, as the scope of responsibilities and required skills has been clearly defined and assigned to specific stages of professional development.

Another significant aspect observed during the pilot project was a shift in the way competence assessment processes were perceived. The initial caution shown by some employees, stemming mainly from fears of a negative assessment, gradually subsided as implementation progressed. Earning further digital badges and a better understanding of the process's purpose helped build trust in the system and fostered a perception of it as a tool supporting development rather than a control mechanism. It is also worth noting that the implementation of micro-credentials contributed to greater employee engagement in initiating improvement activities. The increase in the number of initiatives reported indicates the development of an organisational culture based on learning and the active co-creation of change by employees. From a management perspective, the micro-credential system has also proved to be a useful tool supporting line managers in planning team development and identifying areas requiring training support. The results suggest that micro-credentials can play an important role in building more transparent and structured competence management systems within healthcare organisations.

4. Recommendations

The experience gained from the pilot implementation of the micro-credential system enables us to formulate a set of recommendations for healthcare providers considering the implementation of similar solutions in the area of staff competence management. An analysis of the project's progress indicates that the implementation of micro-credentials in healthcare organisations should be treated as a strategic process, linked to human resources management policy and the organisation's planning documents, rather than merely as a training initiative. This approach facilitates the sustainable integration of the micro-credential system into management practice and enhances its significance in employee competence development processes.

The first recommended stage of implementation is to carry out a competence needs assessment, involving an analysis of the tasks actually performed and the identification of key activities carried out in a given role. Mapping work processes and competences helps to avoid designing competence models that are detached from the organisation's actual operations and increases the relevance of the defined learning outcomes. In the context of healthcare organisations, characterised by highly complex organisational processes, this stage is of particular importance for ensuring the usefulness of the designed solutions.

Another key element is the use of a participatory approach in the design of the micro-credential system. Involving staff in defining competencies and describing learning outcomes allows for a better understanding of the specific nature of the work performed, whilst also increasing acceptance of the organisational changes being introduced. Staff participation also fosters a sense of shared responsibility for the system's operation and strengthens its legitimacy within the organisation.

Another prerequisite for the credibility of the micro-credential system is the development of transparent criteria for validating competences and the implementation of quality assurance mechanisms for the assessment of learning outcomes. The transparency of assessment procedures and the clarity of verification standards strengthen trust in the micro-credentials issued and enhance their significance in human resources management processes. In practice, this requires the establishment of consistent assessment principles, the assignment of responsibility for the validation process, and the assurance of the reproducibility of the procedures used.

Experience from the pilot project also points to the validity of a phased implementation of the micro-credential system. Starting implementation with a single selected professional group allows the adopted model to be tested in practice, potential organisational barriers to be identified, and adjustments to be made before extending the system to other areas of the healthcare provider's operations. This approach reduces implementation risk and facilitates the gradual development of the organisation's competence in managing the micro-credential system.

Linking micro-credentials to human resources management practices is also crucial to the sustainability of the implementation. Integrating the system with processes such as staff appraisals, training planning and the design of career development pathways ensures that micro-credentials become a practical tool for supporting skills development and HR decision-making. In this context, they can serve as a bridge between formal qualifications and the actual competencies required in the day-to-day operations of healthcare organisations.

5. Limitations and future research

The analysis was based on a single-case study, which limits the possibility of directly generalising the findings to the entire healthcare sector. The results presented relate to the experiences of a single healthcare provider participating in the pilot implementation of the micro-credential system, and the organisational specifics of the institution under study may have influenced both the course of implementation and the results achieved.

Conclusions regarding the impact of micro-credentials on the quality of patient care are preliminary and are based mainly on qualitative observations and an analysis of organisational practice. The experience gained indicates the potential for improving the consistency of administrative processes, particularly in the areas of patient communication, the circulation of medical records, and the reduction of organisational errors. However, a full verification of these effects requires quantitative research enabling a more objective assessment of the impact of the implemented solution on the functioning of healthcare providers, using metrics such as work efficiency, patient satisfaction levels, patient service time, and the quality of medical records.

Another significant limitation of the study is the relatively short observation period. Assessing the long-term effectiveness of the implemented system – particularly in terms of staff retention, internal mobility and the sustainability of organisational changes – requires analysis conducted over a longer time horizon. Only long-term observation of the system's functioning will allow for a reliable assessment of its impact on the effectiveness of organisational processes and the stability of the solutions introduced.

The presented case study is exploratory in nature and may serve as a starting point for further research into the use of micro-credentials in the healthcare sector. In the future, it seems particularly appropriate to conduct quantitative studies analysing the impact of micro-credentials on work efficiency and the quality of patient care, as well as their significance for staff retention and internal mobility.

It is also worth considering the possibility of applying micro-credentials to other professional groups within the healthcare sector, particularly in administrative and treatment support roles. Future analyses could be supplemented by comparative studies conducted across different healthcare organisations, enabling the identification of different models for

implementing micro-credentials and the assessment of their effectiveness under varied organisational conditions.

6. Summary

This case study demonstrates that micro-credentials can serve as a practical tool in the healthcare sector to support competence management and the planning of career development pathways, particularly for professional groups whose development is not fully formalised within traditional staff training and development systems. As part of the pilot project, a model was used in which the career pathway of medical secretaries was divided into successive stages of development, each linked to clearly defined and measurable competences verified by means of micro-credentials. This solution is consistent with the European approach to lifelong learning, which emphasises the importance of shorter, high-quality forms of validating learning outcomes, and an added benefit is the digital format of the certificates, which facilitates their storage and sharing.

The results of the pilot scheme point to positive outcomes at both the individual and organisational levels. Participants in the process demonstrated increased awareness of their competencies and greater motivation for professional development, stemming from clear assessment criteria and the opportunity to formally validate the skills they had acquired. At the organisational level, the implementation contributed to greater standardisation of secretarial work, harmonisation of expectations regarding staff, and streamlining of the onboarding process for new employees thanks to clearly defined competency requirements and the assignment of responsibility for implementation. This tool has also enabled managers to plan team development more objectively and identify areas requiring training support, whilst the increase in the number of improvement initiatives proposed by staff may indicate the emergence of a learning-based organisational culture.

The findings from the pilot scheme also form the basis for formulating recommendations for other healthcare providers considering the implementation of a micro-credential system. An analysis of the project's progress indicates that the effectiveness of this solution depends not only on the proper design of the micro-credentials themselves, but also on how they are implemented within the organisation. In particular, the following is recommended: linking the micro-credential system to the organisation's human resources management policy and strategic documents; conducting a thorough assessment of competence needs based on an analysis of tasks actually performed; involving staff in the process of designing competence models and describing learning outcomes; ensuring transparent and reliable rules for the validation of competences and the quality of the assessment process; and the gradual implementation of the system, starting with a selected occupational group. This approach

enables the adopted model to be tested in practice, potential organisational barriers to be identified, and implementation risks to be mitigated prior to its wider application within the healthcare provider's structure.

It should be emphasised, however, that the present study is a case study conducted within a single healthcare organisation and in relation to a single professional group, which limits the possibility of directly generalising the results to the entire healthcare sector. Furthermore, the analysis focused primarily on a qualitative assessment of the implementation process, without an in-depth verification of its long-term quantitative effects. Consequently, further research should include an assessment of the measurable outcomes of the implementation and an analysis of the potential for scaling this solution to other professional groups operating within the healthcare system.

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COMPLEMENTARITY OF RELATIONAL AND STRUCTURAL-PROCEDURAL MECHANISMS IN REDUCING PERSONNEL RISK IN IT DEPARTMENTS: THE ROLE OF THE PSYCHOLOGICAL CONTRACT AND BALANCED HRM

Anna ROGOZIŃSKA-PAWEŁCZYK[1], Agnieszka SITARSKA-PIWKO[2*]

[1] Department of International Business and Trade, Faculty of Economics and Sociology, University of Lodz; anna.rogozinska@uni.lodz.pl, ORCID: 0000-0002-9376-6915
[2] Doctoral School of Social Sciences, University of Lodz; agnieszka.sitarska.piwko@edu.uni.lodz.pl, ORCID: 0000-0002-2733-0144
* Correspondence author

Purpose: The aim of the article is to empirically assess the relationship between sustainable human resource management, psychological contracts and personnel risk in IT departments, and to verify whether psychological contracts act as an intermediary mechanism in the relationship between HR practices and personnel risk.
Design/methodology/approach: The article is a review and research paper. The empirical part includes a quantitative, cross-sectional survey conducted between January and May 2025 among IT department managers in Poland (N = 100). An original 36-item questionnaire was used, and hypotheses were tested using structural equation modelling with bootstrap estimation of the indirect effect.
Findings: Balanced human resource management was negatively associated with personnel risk and positively associated with psychological contract. In the SEM model, the relationship between psychological contract and personnel risk did not reach statistical significance, and the indirect effect was not confirmed.
Research limitations/implications: The study is cross-sectional, based on self-report data and a sample of 100 managers. The absence of mediation should therefore be treated as a lack of confirmation in this sample and as a basis for testing alternative conditional and configurational models.
Practical implications: The findings suggest that personnel risk in IT departments should be reduced not only through relational HR practices, but also through coherent structural and procedural solutions, including transparent rules, development systems and stable work organisation.
Social implications: The study supports a sustainable HRM perspective in which organisational effectiveness is combined with employee well-being, procedural fairness and responsible management of employment relationships.
Originality/value: The article proposes a complementary approach in which relational mechanisms are analysed together with structural and procedural mechanisms in reducing personnel risk in IT departments. The lack of confirmation of mediation provides a basis for developing models that take into account parallel channels of HR practices.

Keywords: sustainable human resource management, psychological contract, personnel risk, IT departments, mediation.
Category of the paper: Research paper; Literature review.

1. Introduction

Contemporary organisations, especially in knowledge-based sectors, are increasingly faced with heightened personnel risk, high turnover, difficulties in retaining talent, and an increase in undesirable behaviour from the employer's perspective (Zhao et al., 2022; Ahmic, Smajlovic, 2022). The literature points to the concept of sustainable human resource management (hereinafter: SHRM) as a response to these challenges, which emphasises the long-term balance between organisational effectiveness and employee well-being (Gilal et al., 2024; Ramgolam et al., 2024). At the same time, research is being conducted on the psychological contract, understood as subjective beliefs about mutual obligations in the employee-organisation relationship (Rousseau, 1989, as cited in Bal et al., 2013). Fulfilling the psychological contract is associated with higher levels of trust and reciprocity, as well as favourable attitudes and behaviours among employees (Nassar, 2021). In particular, its relationship with job satisfaction and intention to leave is pointed out, which is directly relevant to personnel risk (Rogozińska-Pawełczyk, 2020).

Previous studies often explain the impact of HR practices on organisational performance through relational mechanisms, including the psychological contract treated as a mediator (Katou, 2015; Bandyopadhyay, Gupta, 2022). At the same time, in the context of IT departments, there are conditions that may limit explanations based solely on the relational channel. This raises the research question of whether, in the IT department environment, relational mechanisms are indeed the dominant channel through which HR practices influence personnel risk, or whether their role is secondary to structural and procedural solutions. High employee mobility and market pressure mean that decisions to remain in an organisation depend not only on the quality of relationships, but also on structural and procedural conditions and organisational solutions, such as transparency of rules, stability of work organisation, development systems and consistency of procedures (Tiwari, 2023; Mounika et al., 2025). From the perspective of the psychological contract, it is also important that its violation and assessment may be processual, cumulative and sensitive to the organisational context, which reinforces the importance of analysing the mechanisms and boundary conditions of its impact (Rogozińska-Pawełczyk, 2025).

The aim of the article is twofold. First, the theoretical objective is to synthesise the literature on sustainable human resource management (SHRM), psychological contracts and personnel risk in the context of IT departments, and to propose an approach to the complementarity of relational and structural-procedural mechanisms. Secondly, the empirical objective is to

confirmatively verify the model of the relationship between SHRM practices, perceived fulfilment of the psychological contract and personnel risk, with particular emphasis on the indirect effect test.

The contribution of the article consists in (1) shifting the analysis of HRM towards the perspective of personnel risk in the specific context of IT departments, (2) empirical verification of the relational (mediation) model from a managerial perspective, and (3) interpretation of the results within the framework of the complementarity of relational and structural-procedural mechanisms.

2. Literature review and research gaps

Sustainable human resource management (SHRM) extends the traditional HR perspective by introducing a long-term orientation and balancing organisational and employee interests (Gilal et al., 2024; Ramgolam et al., 2024). Rooted in resource-based and stakeholder perspectives, SHRM treats human capital and HR systems as strategic resources and emphasises formalised practices such as competence development, participatory management, work–life balance and transparent remuneration (Barney, 1991, as cited in Gilal et al., 2024; Ramgolam et al., 2024; Kaur et al., 2024; Hassanein et al., 2024). Empirical evidence links sustainable HR practices to higher engagement, stronger loyalty and lower turnover intentions, often assuming that these effects operate through employee attitudes, including the psychological contract (Zhao et al., 2022; Katou, 2015; Bandyopadhyay, Gupta, 2022).

IT departments constitute a particularly demanding context due to high labour mobility and rapid technological change (Tiwari, 2023; Mounika et al., 2025). Turnover generates direct and indirect costs, increasing personnel risk (Pfeffer, 1998, as cited in Ahmic, Smajlovic, 2022). While SHRM may stabilise retention and development, relational mechanisms alone may prove insufficient without procedural coherence and organisational governance (Tiwari, 2023)

Personnel risk refers to employee-related threats to organisational functioning, including turnover, withdrawal and undesirable behaviours (Ahmic, Smajlovic, 2022; Shibly et al., 2025; Zhao et al., 2022). From a risk-oriented perspective, such threats are often systemic and linked to organisational shortcomings (Vogus, 2004; Singhal, 2023).

The psychological contract, defined as employees' subjective beliefs about mutual obligations (Höglund, 2012; Bal et al., 2013), is associated with satisfaction, commitment and lower turnover intentions, and is frequently treated as a mediator in line with social exchange theory (Lv, Xu, 2018; Zhao et al., 2022; Nassar, 2021; Blau, 1964, as cited in Zhao et al., 2022). However, as an individual and perceptual construct, it does not directly capture structural conditions. In highly competitive labour markets, trust and reciprocity may not offset the

absence of competitive and procedurally stable arrangements (Vogus, 2004; Li, 2022; Madhumitha et al., 2024; Mounika et al., 2025).

Thus, the key question is whether, in IT departments, the psychological contract constitutes the dominant mechanism linking SHRM to personnel risk, or whether it operates alongside structural and procedural solutions. To address this issue, a model was adopted including a direct SHRM–personnel risk relationship and a potential indirect effect via psychological contract fulfilment.

3. Research hypotheses

H1. Sustainable human resource management is negatively related to personnel risk in IT departments.

H2. Balanced human resource management is positively related to perceived fulfilment of the psychological contract in the employee-organisation relationship.

H3. Perceived fulfilment of the psychological contract is negatively related to personnel risk in IT departments.

H4. Perceived fulfilment of the psychological contract mediates the relationship between sustainable human resource management and personnel risk in IT departments.

4. Methods

This article is a review and research paper. The theoretical part is a synthetic integration of the literature, while the empirical part is quantitative, cross-sectional and confirmatory. The study was designed as a diagnostic survey conducted in the form of an online questionnaire (CAWI). The logic of the analyses is confirmatory in nature, as hypotheses H1-H4, including the mediation model, are verified. The study covered IT department managers employed in organisations operating in Poland. The inclusion criteria were: (1) holding a managerial position in the IT department for at least 12 months, (2) direct responsibility for managing a team of specialists, (3) active participation in HR processes in the IT department (recruitment, assessment, development), and (4) access to information allowing for the assessment of the department's functioning. The sample was purposively selected with stratification by sector and organisation size, which made it possible to take into account the diversity of organisational contexts.

The data was collected using the CAWI method between January and May 2025. A total of 117 complete questionnaires were obtained, of which 100 were qualified for analysis after applying data quality criteria. Men predominated in the sample (59%), and 65% of respondents declared managerial experience of more than 6 years. Detailed demographic and organisational characteristics of the sample are presented in Table 1.

Table 1.
Demographic and organisational characteristics of the sample (N = 100)

Variable	Category	n	%
Gender	Men	59	59
	Women	41	41
Age	30-39	35	35
	40-49	27	27
	Other groups	38	38
Management experience	> 6 years	65	65
	≤ 6 years	35	35
Size of organisation	Medium/large	61	61
	Small	39	39
Sector	Services	33	33
	IT/technology	25	25
	Other	42	42

Source: Own study.

The variables in the study are managers' perceptual assessments of: (a) sustainable human resource management practices implemented in the organisation, (b) perceived fulfilment of the psychological contract, and (c) perceived personnel risk in the department.

A proprietary questionnaire comprising 36 measurement items was used. All items were in the form of statements rated on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). The questionnaire covered three constructs: (1) SHRM, 8 items relating to the perceived maturity and consistency of personnel management practices in the long term; (2) psychological contract, 12 items measuring perceived fulfilment of obligations in the employment relationship; (3) personnel risk, 16 items covering perceived threats to the functioning of the department resulting from staff turnover, loss of key competences and undesirable behaviour.

Content validation was carried out in two stages. In the first stage, a panel of 10 experts representing HRM (n = 3), IT (n = 4) and economics and management (n = 3) was appointed. In the second stage, independent validation was carried out in an extended group of 40 experts (HRM n = 12, IT managers and analysts n = 16, organisational economics n = 12). The experts assessed the content adequacy and linguistic clarity of the items on a five-point scale. Based on the assessments, the Content Validity Ratio (CVR) and Content Validity Index (I-CVI and S-CVI/Ave) indicators were calculated. For the panel of 10 experts, a critical value of CVR = 0.62 was adopted. The results confirmed the content validity of the items: for SHRM CVR 0.64-0.86 and S-CVI = 0.91; for personnel risk CVR 0.68-0.92 and S-CVI = 0.93; for the psychological contract CVR 0.62–0.88 and S-CVI = 0.89. (Lawshe, 1975; Polit, Beck, 2007; Ayre, Scally, 2017).

Internal reliability was assessed using Cronbach's α coefficient (Cronbach, 1951; Kaiser, 1970; Bartlett, 1950; Worthington, Whittaker, 2006). The values obtained were $\alpha = 0.774$ for SHRM, $\alpha = 0.764$ for the psychological contract, and $\alpha = 0.967$ for personnel risk. Prior to factor analysis, the adequacy of the data for factorisation was confirmed, obtaining KMO = 0.907 and a significant Bartlett's sphericity test ($\chi^2 = 2847.3$; $p < 0.001$). Exploratory factor analysis (EFA) confirmed the unidimensional structure of each scale, with explained variance: SHRM 45.9% (loadings 0.52-0.78), personnel risk 51.1% (loadings 0.61-0.85) and psychological contract 44.4% (loadings 0.49-0.81). Next, confirmatory factor analysis (CFA) was performed for individual scales, obtaining an acceptable fit of measurement models (CFI 0.910-0.940; TLI 0.890-0.910; RMSEA 0.062-0.068; SRMR 0.048-0.052). It should be noted that exploratory and confirmatory factor analysis were conducted on the same sample, therefore the obtained fit parameters are preliminary and require replication on an independent sample (Worthington, Whittaker, 2006).

In the first step, descriptive statistics and correlations between variables were calculated. In the second step, the relationship model was estimated using structural equation modelling (SEM) at a significance level of $\alpha = 0.05$, reporting standardised coefficients (β), p-values and 95% confidence intervals. The use of SEM was justified by the need to simultaneously estimate relationships in the mediation model and reduce measurement error compared to single-equation approaches.

The indirect effect, understood as the indirect relationship between sustainable human resource management and personnel risk via a psychological contract, was estimated using SEM. The significance of the indirect effect was verified using the bootstrap method based on 95% confidence intervals; the results of the Sobel test were also presented as supplementary information. Due to the limited power of tests for indirect effects at N = 100, the lack of confirmation of mediation was interpreted cautiously and treated as a result not confirming the indirect effect in this sample. Due to the use of self-reporting in the survey and the simultaneous measurement of variables in a single questionnaire, there is a risk of common method variance (CMV). In order to limit CMV, procedural safeguards were used, including ensuring the anonymity of respondents, neutral wording of items, and separation of blocks of questions concerning independent and dependent variables. Despite the use of solutions, CMV cannot be completely ruled out, which should be treated as a limitation of the study. The adopted model design allows for the separation and independent estimation of the impact of relational and structural-procedural mechanisms. This procedure is a preliminary step to testing conditional (moderational), interactive or configurational models, which require different specifications and greater statistical power. (Preacher, Hayes, 2008; Sobel, 1982; Fritz, MacKinnon, 2007; Podsakoff et al., 2003; Podsakoff et al., 2012).

5. Results

Table 2 presents descriptive statistics for the constructs studied. The highest mean was recorded for the psychological contract (M = 3.94; SD = 0.43), which indicates a relatively positive assessment of the employment relationship from a managerial perspective. The average level of SHRM was M = 3.23 (SD = 0.37), while the average level of personnel risk was M = 2.69 (SD = 0.45).

Table 2.
Descriptive statistics and reliability of scales (N = 100)

Construct	M	SD	Skewness	Kurtosis	Cronbach's α
SHRM	3.23	0.37	−0.14	0.21	0.774
Personnel risk	2.69	0.45	0.14	−0.51	0.967
Psychological contract	3.94	0.43	−0.19	0.35	0.764

Source: Own study.

Table 3 presents correlations between variables. SHRM was strongly and negatively correlated with personnel risk ($r = -0.656$; $p < 0.001$) and positively correlated with the psychological contract ($r = 0.553$; $p < 0.001$). The psychological contract showed a negative correlation with personnel risk ($r = -0.376$; $p < 0.001$).

Table 3.
Correlation matrix of the studied constructs

Construct	SHRM	Personnel risk	Psychological contract
SHRM	1.000		
Personnel risk	−0.656***	1.000	
Psychological contract	0.553	−0.376***	1.000

Note. *** $p < 0.001$.

Source: Own study.

The relationship model was estimated using the SEM method, reporting standardised coefficients. The results of hypothesis testing are presented in Table 4. SHRM was significantly and negatively associated with personnel risk (H1: $\beta = -0.268$; $p = 0.016$). SHRM was significantly and positively associated with the psychological contract (H2: $\beta = 0.466$; $p < 0.001$). The relationship between the psychological contract and personnel risk did not reach statistical significance in the SEM model (H3: $\beta = -0.082$; $p = 0.451$). The structural model was similar to the saturated model, therefore global fit indices were not informative; path coefficients with confidence intervals were reported.

Table 4.
Results of hypothesis testing in the SEM model

Hypothesis	Path	β	SE	t	p	95% CI
H1	SHRM → personnel risk	−0.268	0.108	−2.48	0.016	[−0.481; −0.054]
H2	SHRM → psychological contract	0.466	0.089	5.23	<0.001	[0.291; 0.641]
H3	psychological contract → personnel risk	−0.082	0.109	−0.76	0.451	[−0.296; 0.132]

Source: Own study.

The indirect effect, understood as the indirect influence of SHRM on personnel risk through a psychological contract, was not confirmed (H4: $\beta = -0.034$; $p = 0.767$; 95% CI [−0.137; 0.076]). The Sobel test also did not indicate the significance of the indirect effect ($Z = -0.68$; $p = 0.497$). This means that despite the significant relationship between balanced human resource management and psychological contract (H2) and the observed negative correlation between psychological contract and personnel risk, the SEM model did not show a significant impact of psychological contract on personnel risk. Thus, no empirical confirmation of the mediating role of psychological contract in the analysed model was obtained.

Given the limited sample size, the lack of mediation should be interpreted as a lack of confirmation of the indirect effect in this sample. Power analysis indicates that $N = 100$ is sufficient for detecting medium and large effects, but insufficient for reliably detecting small effects, which are typical for indirect paths.

6. Discussion

The lack of confirmation of psychological contract mediation (H4) suggests that in the dynamic IT labour market the relational channel does not fully explain the impact of HRM practices on personnel risk. Rather than undermining the theoretical relevance of the psychological contract, this finding indicates that relational mechanisms alone may be insufficient to account for personnel risk understood as a systemic phenomenon (Katou, 2015; Bandyopadhyay, Gupta, 2022). From a risk management perspective, the result is consistent with the assumption that personnel risk requires systemic solutions, not only attitudinal alignment (Vogus, 2004; Ahmic, Smajlovic, 2022).

The findings therefore challenge the dominance of relational mediation models in the IT context and indicate that SHRM may exert a direct, stabilising effect on personnel risk. This supports a complementary framework in which relational and structural–procedural mechanisms coexist, and their relative importance depends on process maturity and labour market conditions.

At the same time, alternative explanations must be considered, including limitations in measuring the psychological contract from a managerial perspective, limited statistical power, potential construct overlap, and the cross-sectional design. Thus, the absence of mediation

should be treated as a direction for further research rather than as evidence of a single dominant mechanism.

In IT departments characterised by high mobility and competitive pressure, relational bonds may not suffice without parallel procedural stability and competitive organisational conditions (Mounika et al., 2025). The results therefore support a risk-oriented interpretation of SHRM, in which systemic maturity and procedural coherence constitute key components of personnel risk reduction.

7. Summary

The analysis integrates a review of the literature with the results of a quantitative survey among IT managers. The results confirmed that SHRM practices are directly and significantly associated with lower personnel risk (H1), promote higher perceived fulfilment of the psychological contract (H2), and that fulfilment of the contract showed a negative relationship with personnel risk, but this path did not reach statistical significance in the SEM model. At the same time, the mediating role of the psychological contract in the relationship between SHRM and personnel risk (H4) was not confirmed. This means that in the sample studied, the impact of SHRM on personnel risk was not primarily explained by the relational path.

In theoretical terms, this result supports the development of models integrating relational and structural-procedural mechanisms. The psychological contract remains useful for explaining attitudes and behaviours at the individual level, but in the analysis of systemic phenomena such as personnel risk, its role should be considered in conjunction with the architecture of organisational processes, the maturity of HR functions and the quality of procedural governance (Katou, 2015; Vogus, 2004; Li, 2022). Incorporating a risk management perspective into research on HRM allows for a better understanding of the function of HR practices not only as motivational tools, but also as stabilising and protective mechanisms (Ahmic, Smajlovic, 2022; Shibly et al., 2025). Excessive investment in relational practices without procedural stability can lead to unstable employee retention outcomes in IT departments. In this article, the concept of synergy is understood as the complementarity of relational and structural-procedural mechanisms, rather than as an empirically tested interactive effect. Conclusions about potential conditional effects should therefore be treated as a theoretical proposal resulting from the integration of literature and empirical observations concerning the lack of mediation. The lack of significance of the mediating path indicates the need to explore alternative configurative models. Future research should verify the moderation hypothesis, in which the psychological contract acts as a boundary condition (e.g., it enhances the impact of procedures only when trust is high), and analyse parallel mediating paths.

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HOW ORGANIZATIONAL SIZE SHAPES PROTECTIVE RESOURCES: IMPLICATIONS FOR JOB BURNOUT

Aleksandra SPIK

Faculty of Management, University of Warsaw; a.spik@uw.edu.pl, ORCID: 0000-0002-3110-3446

Purpose: Identification of the predictors hierarchy of job burnout and analysis of differences in resource levels (support, autonomy, economic security) depending on the size of the enterprise in Poland.
Methodology: Quantitative study on a sample of employees of Polish companies (N = 606). Descriptive statistics, correlations, ANOVA with post-hoc tests, and hierarchical linear regression were used in the program jamovi.
Findings: Organizational support proved to be the strongest predictor of burnout reduction (β = -0.34), surpassing economic factors. Microenterprises are characterized by the highest support, while a "trap of autonomy" (lowest level of autonomy) was identified in small firms. Company size differentiates access to resources, but does not directly affect the level of burnout itself.
Research limitations: Reliance on self-reporting by respondents and limited sample representativeness.
Practical implications: Professionalization of HR in small companies and building relational support structures in large, formalized organizations are recommended.
Social implications: Highlighting the primacy of relational resources over economic ones in building resilience to burnout, which is crucial for reducing the social costs of burnout.
Originality: The work fills a gap in JD-R model research by considering organizational size as a moderator and demonstrating specific resource deficits dependent on enterprise scale.
Keywords: job burnout, organizational support, autonomy, economic security
Category of the paper: research paper.

1. Introduction

Recent studies on Polish employees indicate that job burnout affects as many as 78.3% of the working population. Moreover, an alarming upward trend has been observed, with burnout levels increasing by 13% since 2022 (Twardowska-Faszczewska, Sęk, 2025). Low levels of employee well-being generate significant organizational costs, including reduced work quality, absenteeism, and increased sick leave.

The aim of the study presented in this article is to analyze burnout in the context of organizational resources that may serve a protective function for employees, as well as to examine how organizational size differentiates both the level of burnout and the availability of such protective resources. The topic addressed in this paper fills an important research gap related to the inclusion of organizational size and the resulting specificity of working conditions in burnout analyses. The majority of existing studies treat organizations as homogeneous entities. In contrast, the present study introduces a distinction based on organizational size.

2. Literature Review

The phenomenon referred to as job burnout was first described by Herbert Freudenberger in the 1970s in his work *Staff Burn-Out*, where it was defined as a state of "fatigue or frustration" (Freudenberger, 1974, as cited in Sęk, 2009, p. 35; Freudenberger, 2010). The most prominent researcher in this field, Christina Maslach, conceptualized burnout as a syndrome affecting individuals working in people-oriented professions, such as teachers, nurses, or social workers (Schaufeli, Leiter, Maslach, 2009).

Maslach identified three key dimensions of burnout (Maslach, Leiter, 1997):

- **emotional exhaustion** (overload, fatigue, and reduced willingness to work),
- **cynicism** (withdrawal from engagement and decreased interest in the quality of one's work), and
- **depersonalization** (an impersonal, detached, and cold attitude toward clients).

Within the literature, an ongoing debate concerns whether burnout should be understood primarily as a work-related phenomenon or as a broader condition influenced by factors beyond the work environment (Bianchi et al., 2014). By focusing on the work environment, the present study aligns with the research tradition strongly advocated by Maslach, who emphasized the importance of analyzing workplace conditions. Overemphasizing multifaceted causes of burnout in public discourse risks "absolving organizations of responsibility" and blurring the boundaries of the construct by conflating it with individual stress resilience or depression (Maslach, Leiter, 1997).

Maslach and her colleagues illustrate this perspective with a compelling metaphor: *If a canary in a coal mine weakens, the solution should not be to strengthen the bird so that it becomes more like a hawk. Instead, one should address the problems of the mine itself* (Maslach, Leiter, 2022, p. 10).

Researchers investigating burnout have also sought to identify factors contributing to its development. For example, among call-center employees, burnout has been found to be primarily driven by emotional dissonance—i.e., the discrepancy between experienced emotions

and those that can be expressed toward clients. In contrast, among factory workers, workload and lack of autonomy were identified as the key determinants (Bakker et al., 2003). Similarly, studies have explored why some employees develop burnout symptoms under identical working conditions while others do not (Petrou, Demerouti, Schaufeli, 2015).

A major breakthrough in this area was the development of the Job Demands–Resources (JD-R) model (Bakker, Demerouti, 2007). The JD-R model revolutionized burnout research for two main reasons. First, it provided a coherent theoretical framework that integrates and explains previously fragmented empirical findings. Second, it demonstrated that burnout can occur across all occupations characterized by an imbalance between job demands and job resources, rather than being limited to people-oriented professions (Demerouti, Schaufeli, 2001).

According to the JD-R model, every workplace contains factors that facilitate effective job performance as well as those that constitute demands and challenges (see Table 1).

Table 1.
Job Demands-Resources model

Job demans	Job resources
Quantitative: work load, rush, time pressure	**Economical:** job security, remuneration, career paths
Emocional: confrontation with the user, emotional labour, neccessity of managing emotions	**Relational:** support from the supervisor, good atmosphere in the team, care from colleagues
Cognitive: concentration, task complexity, information processing	**Task-related:** autonomy, participation in decision-making
Operational and physical conditions: noise, poor ergonomics, breakdowns, difficulties in operating equipment	
Role-related: role conflict, lack of clear expectations from the organization	

Source: own elaboration based on: Shauflei, Taris, 2014.

According to the assumptions of the Job Demands–Resources (JD-R) model, the occurrence of job burnout depends on the adequacy of organizational resources relative to job demands. The following section presents research findings on the relationships between specific types of resources included in the study hypotheses and burnout.

Empirical evidence indicates that **task-related resources**, such as perceived autonomy at work and the ability to influence decision-making, reduce burnout by increasing employees' control over their tasks. This, in turn, mitigates role conflict and enables better regulation of workload (Guo et al., 2023). These findings have been supported by Geidelina-Lugowska and Cekluz (2025), as well as by Boelhouwer et al. (2020), who demonstrated that employee autonomy reduces burnout, particularly under conditions of high job demands. Interestingly, some studies suggest that autonomy may, under specific conditions, intensify burnout—particularly in organizations characterized by high ethical standards and elevated performance expectations (Santiago-Tornes et al., 2025).

Relational resources, particularly perceived organizational support (POS), refer to employees' beliefs that their organization values their contributions and fulfills their basic psychological needs in the workplace, including acceptance, respect, belonging, and emotional care (Rhoades et al., 2002). Based on social exchange theory (Bunner et al., 2021), it can be expected that high levels of POS will be reciprocated by increased employee engagement and high-quality job performance. A substantial body of research confirms the association between POS and various indicators of well-being, including job satisfaction (Donald et al., 2016; Aranganathan, Sivarethinamohan, 2016; Kurtessis et al., 2017), organizational commitment (Baranik, Roling, 2010; Tatt et al., 2024; Kim, Park, 2025), reduced turnover intentions (Bukhari, Kamal, 2017), as well as work quality and organizational citizenship behaviors (Jermsittiparsert et al., 2019).

Organizational support has also been shown to reduce burnout across diverse employee groups, including individuals with disabilities (Alcover et al., 2018), secondary school teachers in the United States (Brown, Roloff, 2015), special education teachers in Israel (Paris et al., 2021), and nurses in China (Zhang et al., 2024). Particularly noteworthy findings come from a meta-analysis involving several thousand employees across different organizations and professions, which identified organizational support as a key resource protecting employee well-being (Kurtessis et al., 2017).

An important factor that has been relatively underexplored in burnout research is **organizational size**. However, a comparison of working conditions across micro, small, medium, and large organizations reveals systematic differences in organizational culture and approaches to employees. A study conducted on a sample of 15,000 employees in Taiwan found that the highest levels of burnout related to workload were observed among employees in small and medium-sized enterprises, compared to those working in large private firms and the public sector (Yeh et al., 2018). Similarly, research conducted in Slovenia in 2021 among employees aged over 50 indicated that burnout symptoms were more pronounced among employees of small firms compared to those in medium and large organizations (Rozman, Milfelner, 2022). Studies in the healthcare sector further suggest that larger organizations tend to provide better employee support, which contributes to lower levels of burnout (Larsman et al., 2024).

3. Methodology

Based on the literature review and empirical evidence, the following research hypotheses were formulated:

H1. Organizational support, autonomy, and economic security are significant negative predictors of job burnout. In line with the JD-R model, employees are provided with three types of resources by the organization. The purpose of Hypothesis 1 is to verify whether all these resources function as protective factors against burnout.

H2. Organizational support has greater predictive power in reducing burnout than economic security. This hypothesis aims to determine whether financial compensation or perceived organizational support plays a more significant role in protecting employees from burnout.

H3. There are significant differences in the levels of resources (organizational support and autonomy) depending on organizational size. This hypothesis addresses the availability of resources across organizations of different sizes (micro, small, medium, and large) and examines how these differences affect employees' access to autonomy and support.

H4. Organizational size does not directly differentiate burnout levels but moderates the availability of protective resources. This hypothesis tests whether differences in resource availability associated with organizational size (as proposed in H3) translate into differences in burnout levels among employees.

Research procedure

The study involved 606 participants and was conducted using a self-report method via a Google Forms questionnaire. The following variables were controlled: age (45% of respondents were over 40 years old), gender (41% male), tenure in the current organization (21% over 20 years; 33% between 2 and 4 years), and organizational size (micro: 1-9 employees; small: 10-49; medium: 50-249; large: 250 or more employees). Participation in the study was voluntary, and respondents were recruited using a snowball sampling method. The sample is not fully represenative for the general population, however both size and diversity of the sample is sufficient for achiving satisfactory level of relability of th conducted analyses. Statistical analyses were conducted using the Jamovi software.

Measures

The variables analyzed in the study were assessed using a self-report scale ranging from 1 ("strongly disagree") to 10 ("strongly agree"). Four measurement scales were employed, based on selected items drawn from established instruments. The selected items were chosen to best capture the theoretical constructs under investigation (Kristensen et al., 2005; Widerszyl-Bazyl, Cieślak, 2014). Psychometric analysis of internal consistency indicated that all scales achieved satisfactory reliability levels (0.86; 0.77; 0.82; 0.88).

4. Results and discussion

The results of the empirical study are presented below in accordance with the previously formulated research hypotheses. Descriptive statistics (Table 2) indicate that the distributions of all key variables are characterized by a high degree of symmetry. Skewness values ranged from −0.60 (Autonomy) to 0.05 (Job burnout), which—given the sample size—justifies the use of parametric statistical methods, including hierarchical linear regression.

Table 2.
Descriptive statistics of the analyzed variables (N = 606)

	Econimic security	Autonomy	Perceived organizational support	Job burnout
N	606	606	606	606
Mean	6,51	6,91	5,85	5,53
Standard deviation	2,32	2,36	2,31	2,22
Skewness	-0,344	-0,582	-0,213	0,0538
Kurtosis	-0,659	-0,517	-0,751	-0,898

Source: Own elaboration based on empirical data.

Results for Hypotheses 1 and 2

To test Hypothesis 1, Pearson correlation coefficients were first calculated between job burnout and the three examined job resources: organizational suport (POS), economic security, and autonomy.

Table 3.
Pearson correlation matrix between job resources and job burnout (N = 606)

	Autonomy	Perceived organizational support	Economic security
Perceived organizational support	0.361***	—	
Economic security	0.389***	0.420***	—
Job burnout	-0.159***	-0.341***	-0.143***

*Note: df = 604. Significance levels: ***p < .001.

Source: Own elaboration based on empirical data.

The correlation analysis (Table 3) demonstrates that both relational and economic resources are negatively associated with job burnout. All correlations are statistically significant ($p < .001$). The strongest negative relationship was observed between burnout and organizational support ($r = −0.34$). Autonomy was also negatively correlated with burnout, although to a lesser extent ($r = −0.16$), as was economic security ($r = −0.14$).

These findings are consistent with the assumptions underlying Hypothesis 1, indicating that higher levels of job resources are associated with lower levels of burnout.

In the next step, a linear regression analysis was conducted. Prior to the analysis, key assumptions were verified. No multicollinearity issues were identified, as variance inflation factor (VIF) values for all predictors remained below 2.5. Examination of the Q–Q plot of

residuals confirmed an approximately normal distribution, while the assumption of homoscedasticity was also met. Furthermore, the residuals plotted against predicted values exhibited a random distribution, indicating that the regression model provides equally reliable predictions of burnout across both low and high levels of the outcome variable.

Results for Hypotheses 1-3

A hierarchical linear regression analysis was conducted to examine the predictive power of job resources on job burnout. In the first step, demographic variables (age and tenure in the current organization) were entered into the model, explaining only 3% of the variance in burnout levels.

The inclusion of **economic security** (Step 2) and **autonomy** (Step 3) increased the model's explanatory power to 6% and 8%, respectively. A substantial improvement occurred after introducing **organizational support** (Step 4), which nearly doubled the explained variance to 15.4%. The overall model was statistically significant ($p < .001$), with organizational support emerging as a strong negative predictor ($\beta = -0.34$).

Hypothesis 1

The results support Hypothesis 1. All three resources—economic security, autonomy, and organizational support—were found to be significant predictors of job burnout. Importantly, these effects remained statistically significant even after controlling for age and organizational tenure included in the regression model.

Hypothesis 2

The findings provide strong support for Hypothesis 2. Organizational support emerged as the most powerful predictor of burnout. The increase in explained variance associated with its inclusion exceeded the combined contribution of autonomy and economic security.

Moreover, an analysis of the regression steps reveals an important pattern. In Steps 2 and 3 (including age, tenure, economic security, and autonomy), both economic security and autonomy functioned as significant negative predictors of burnout. However, after introducing organizational support in Step 4, these variables lost their statistical significance.

This suggests that **organizational support plays a dominant role in reducing burnout**, effectively overshadowing the effects of economic and task-related resources. The findings indicate that interpersonal relationships and perceived support from the organization may buffer or neutralize the impact of financial conditions and decision-making autonomy, constituting a key protective mechanism against job burnout.

Hypothesis 3

To test Hypothesis 3, mean levels of economic security, autonomy, and organizational support were compared across different organizational sizes. The analysis revealed noticeable differences between organizations, particularly with respect to **relational resources (organizational support)** and **decision-related resources (autonomy)**. In contrast, the average levels of economic security appeared relatively similar across all organizational types (see Table 4).

Subsequently, statistical significance of these differences was examined using analysis of variance (ANOVA), followed by post hoc tests.

Table 4.
Mean levels of job resources by organization size

Organization size	Econimic securuty- mean	Autonomy - mean	Organziational suport (POS)
Mikro	6,59	7,85	6,43
Small	6,24	6,50	5, 80
Medium	6,72	7,04	6,01
Large	6,48	6,63	5,50

Source: Own elaboration based on empirical data.

Results for Hypothesis 4

Due to unequal group sizes, Welch's correction was applied. Given the violation of the homogeneity of variance assumption (Levene's test: $p < .05$) and unequal group sizes, the Games–Howell post hoc test was used for pairwise comparisons.

The ANOVA results indicated statistically significant differences between employees from organizations of different sizes in terms of both **autonomy** and **organizational support**. Specifically, for autonomy, the analysis yielded $F(3, 293) = 8.80$, $p < .001$, while for organizational support, $F(3, 283) = 4.12$, $p = .007$.

Post hoc comparisons

Detailed pairwise comparisons using the Games-Howell test revealed that **micro-enterprises differ significantly from all other organizational types in terms of higher levels of autonomy** ($p < .001$). The largest difference was observed between micro-enterprises and small firms (mean difference = 1.35 points in favor of micro-enterprises), followed by the comparison between micro and large organizations (mean difference = 1.22 points).

These findings are particularly noteworthy, as they indicate a **systematic decline in autonomy in organizations employing between 10 and 49 employees**, where autonomy levels were the lowest in the entire sample. This pattern may be interpreted as an "autonomy gap". The result is somewhat unexpected in light of existing literature and may suggest deficiencies in work organization within small firms. Post hoc comparisons for organizational support revealed a statistically significant difference ($p < .001$) between micro-enterprises and

large organizations (over 250 employees). Employees in micro-enterprises reported significantly higher levels of perceived support and organizational care than those in large organizations, with a mean difference of approximately 0.94 points.

This finding suggests that, despite well-developed procedures, large organizations may underperform in the relational domain. Interpersonal relationships in such settings may become more transactional, which can be conceptualized as a "support paradox"—or more precisely, a deficit of perceived support.

Hypothesis 4

A one-way ANOVA examining differences in job burnout across organizational sizes (micro, small, medium, and large) revealed no statistically significant differences, $F(3, 291) = 1.48$, $p = .22$.

This result indicates that, despite observed differences in the availability of protective resources (as demonstrated in the analysis of Hypothesis 3), these differences do not translate into variations in burnout levels. The absence of significant differences in burnout, despite clear disparities in resources, suggests the presence of **adaptive or compensatory mechanisms** that may offset resource deficiencies across organizational contexts.

5. Conclusion

The findings presented in this study, along with the proposed model, capture only a selected segment of organizational reality. Several limitations should be acknowledged. First, the cross-sectional design of the study prevents causal inference. Second, the reliance on self-reported data introduces the risk of subjective bias. Third, the use of relatively short measurement scales may limit the precision of construct operationalization and, consequently, the generalizability of the findings. Despite these limitations, the results reveal several important and non-obvious relationships. Most notably, **organizational support emerged as a more significant protective factor against job burnout than both employee autonomy and economic security**. This finding highlights the central role of relational resources in shaping employee well-being.

Furthermore, the results indicate that burnout cannot be adequately explained by demographic factors such as age and tenure, challenging assumptions that attribute burnout primarily to fatigue or routine associated with longer work experience.

The study also identifies two noteworthy organizational patterns. First, the presence of an **"autonomy gap"** in small organizations suggests a need to strengthen employee decision-making capacity in this context. Second, the findings point to a **"support paradox"** in large organizations, where formalized structures and procedures may fail to translate into perceived

organizational support, indicating the necessity to invest in relational capital and the quality of interpersonal interactions.

Theoretical contribution and practical implications

This study contributes to the literature by extending the application of the Job Demands–Resources (JD-R) model through the explicit inclusion of **organizational size as a differentiating factor**. While prior research has largely treated organizations as homogeneous entities, the present findings demonstrate that organizational size shapes the distribution and effectiveness of job resources, particularly relational and decision-related resources.

Moreover, the identification of the "autonomy gap" and the "support paradox" offers novel conceptual lenses for understanding how structural characteristics of organizations influence employee well-being.

The findings carry several implications for organizational practice:

- **Small organizations** should prioritize the development of employee autonomy and decision-making structures to address the identified autonomy gap.
- **Large organizations** should focus on strengthening relational capital and ensuring that formal support mechanisms translate into employees' subjective experience of support.
- **Managers and HR practitioners** should recognize that financial incentives alone are insufficient to protect employees from burnout, fostering a supportive organizational climate is crucial.

Directions for future research

Future research should address the limitations of the present study by employing longitudinal designs to better capture causal relationships. Additionally, incorporating objective measures alongside self-reports could enhance the robustness of findings. Further studies could also explore the mechanisms underlying the autonomy gap and support paradox, as well as examine whether these patterns persist across different cultural and industry contexts. Expanding the model to include additional organizational and individual-level variables may provide a more comprehensive understanding of burnout dynamics.

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TEAM EMPOWERMENT AND CROSS-CULTURAL TEAMWORK: INSIGHTS FROM SPANISH AND POLISH MANAGEMENT STUDENTS

Izabela STAŃCZYK[1*], Germán GÉMAR[2], Katarzyna Wiktoria SYRYTCZYK[3]

[1] Jagiellonian University, Faculty of Management and Social Communication, Institute of Economics, Finance and Management, Kraków, Poland; izabela.stanczyk@uj.edu.pl, ORCID: 0000-0002-1496-130X
[2] University of Malaga, Malaga, Spain; ggemar@uma.es, ORCID: 0000-0002-2900-3489
[3] Jagiellonian University, Faculty of Management and Social Communication, Institute of Economics, Finance and Management, Kraków, Poland; katarzyna.syrytczyk@uj.edu.pl, ORCID: 0009-0004-0371-7311
* Correspondence author

Purpose: The aim of the research is to compare perceptions of empowerment among management students from Spain and Poland within academic teamwork contexts.
Design/methodology/approach: Using a quantitative, cross-sectional survey conducted in October 2024 with 321 participants (76 Spanish, 245 Polish), data were analyzed using descriptive statistics and Mann-Whitney U tests.
Findings: Both groups primarily associated empowerment with trust, support, and motivation in teamwork. However, significant cultural differences emerged: Polish students emphasized autonomy, collaboration, and shared decision-making, while Spanish students viewed empowerment through structured leadership and supervision. Observed empowerment behaviors included active participation, shared task responsibility, and open communication, though autonomy-related behaviors varied. Findings highlight that empowerment is culturally nuanced, shaped by educational and societal contexts. The study contributes to cross-cultural management research and suggests that academic and organizational environments should foster trust-based, participative climates to enhance teamwork effectiveness and student engagement.
Research limitations/implications: The limitations of this study include its reliance on self-reported data, potentially influenced by subjective perceptions or response biases. Additionally, the cross-sectional nature of the research restricts causal interpretations of empowerment's effects on team performance. Future studies could expand the scope by including longitudinal methodologies or experimental designs to better explore causality.
Practical implications: This study offers valuable insights for educators and organizational leaders. The highlighted importance of a supportive and trusting climate suggests that universities and businesses should actively foster environments characterized by open communication and mutual trust. Results indicating cultural differences suggest tailored strategies are essential when implementing empowerment-based practices across diverse student or employee populations.
Universities could utilize these findings to refine teamwork-based curricula, focusing on autonomy and collective task-sharing approaches that enhance student satisfaction and effectiveness. Furthermore, human resource professionals and managers can leverage these

insights to cultivate organizational cultures that better support autonomy, proactivity, and open communication across diverse teams.
Originality/value: This study examined cross-cultural perceptions and observed practices of empowerment among university students from Spain and Poland, offering valuable comparative insights that contribute to existing empowerment theory and practice.
Keywords: Teamwork, empowerment, cross-cultural comparison, organizational behavior, higher education.
Category of the paper: Research paper.

1. Introduction

Empowerment, a widely explored concept in organizational studies, involves enhancing autonomy, decision-making authority, and proactive behaviors among team members. It has increasingly been recognized as crucial for improving individual and team performance (Chen, Kirkman, Kanfer, Allen, Rosen, 2007; Mathieu, Gilson, Ruddy, 2006). The current globalized educational and professional contexts highlight the importance of understanding empowerment through cross-cultural lenses.

Extensive literature has examined empowerment's multidimensional nature, emphasizing its structural and psychological dimensions. Structural empowerment includes managerial delegation of authority and autonomy, whereas psychological empowerment involves perceptions of self-efficacy, meaning, and personal impact (Maynard, Gilson, Mathieu, 2012; Seibert, Wang, Courtright, 2011). Empirical evidence indicates empowerment positively influences motivation, creativity, job satisfaction, and overall organizational performance (Kirkman, Rosen, Tesluk, Gibson, 2004; Raub, Robert, 2010).

Cross-cultural studies provide insights into the varied perceptions and practices of empowerment, highlighting how cultural contexts shape organizational behaviors differently. For example, Jiang et al. (2016) indicated significant cultural moderation effects on the relationship between empowerment and team effectiveness, specifically through knowledge-sharing behaviors. Further, Hempel, Zhang, and Han (2012) found contrasting influences of organizational decentralization and formalization on empowerment perceptions across different cultures.

Despite this extensive research, gaps remain in understanding empowerment's nuanced perception among students in academic team contexts across cultures. This study addresses this gap by investigating Spanish and Polish students' conceptualizations of empowerment and their observations of empowerment-related behaviors within academic teamwork settings.

The primary objective of this research is thus to provide empirical insights into cross-cultural similarities and differences regarding empowerment, contributing theoretically and practically to empowerment literature and organizational practices. Understanding these cross-cultural dimensions holds significant implications for education professionals, organizational

leaders, and HR specialists aiming to optimize team performance and employee engagement across diverse cultural settings.

2. Literature Review

2.1. Conceptualizations and Dimensions of Empowerment

Empowerment is widely recognized as a critical concept within organizational studies, involving psychological and structural dimensions that significantly enhance both individual and team-level performance. According to Maynard, Gilson, and Mathieu (2012), psychological empowerment includes perceptions of self-efficacy, meaning, autonomy, and personal impact, whereas structural empowerment involves organizational processes, policies, and managerial practices that delegate decision-making authority and autonomy.

Allen, Lehmann-Willenbrock, and Sands (2016) emphasize empowerment as crucial for promoting proactive employee behaviors, particularly when nurtured through supportive organizational climates characterized by clear and open communication. Furthermore, Seibert, Wang, and Courtright (2011), through their meta-analytic study, reinforced the positive relationships between empowerment and critical organizational outcomes such as job satisfaction, motivation, and productivity. Haas (2017) elaborated on empowerment as an essential component in granting employees decision-making autonomy and freedom of action, thus driving enhanced organizational commitment and higher job engagement.

The structural dimension of empowerment is closely linked to organizational frameworks that enable autonomy and control over work tasks through the delegation of decision-making authority. Haas (2017) argues that autonomy in decision-making fosters team effectiveness by allowing employees to take ownership of their tasks and responsibilities. This approach aligns with research emphasizing that empowerment strategies improve motivation, engagement, and adaptability in dynamic organizational environments. Studies further suggest that organizations implementing empowerment-focused strategies observe higher levels of team effectiveness, improved project outcomes, and overall performance enhancement (Allen et al., 2016; Kirkman et al., 2004; Mathieu et al., 2006).

2.2. Empowerment in Team Contexts and Performance

Empirical literature consistently highlights empowerment as a critical driver for improving team performance. Mathieu, Gilson, and Ruddy (2006) proposed a robust theoretical model that positions empowerment as a pivotal factor for team autonomy, decision-making, and proactive behavior. Similarly, Chen, Kirkman, Kanfer, Allen, and Rosen (2007) highlighted empowerment's significant influence on enhancing team autonomy, ultimately contributing to higher performance through increased motivation and individual proactivity.

Kirkman, Rosen, Tesluk, and Gibson (2004) expanded the discussion into the context of virtual teams, identifying empowerment as crucial for enhancing performance through autonomy and efficient communication practices, particularly in remote or geographically dispersed environments. Raub and Robert (2010) further corroborated that empowered teams typically exhibit higher creativity, more effective decision-making processes, and greater resilience in adapting to organizational challenges.

Empowerment has been widely explored in human resource management as a key strategy for enhancing employee performance and organizational success. Seibert, Wang, and Courtright (2011) conducted a meta-analysis demonstrating that both psychological empowerment (motivation, self-efficacy, and trust) and structural empowerment (delegation of authority and autonomy) contribute significantly to job satisfaction and commitment. Similarly, Maynard, Gilson, and Mathieu (2012) emphasized that organizations adopting empowerment strategies benefit from increased employee engagement, higher adaptability, and long-term performance improvements, reinforcing its role as a competitive advantage in modern workplaces.

Moreover, empowerment is closely related to motivational aspects within organizational settings. Studies indicate that empowerment enhances intrinsic motivation, job satisfaction, and reduces workplace stress, thus creating more productive and positive working environments (Raub, Robert, 2010; Savery, Luks, 2001).

2.3. Cross-Cultural Perspectives on Empowerment

Research consistently demonstrates the importance of cultural context in shaping empowerment perceptions and the effectiveness of empowerment practices. Jiang et al. (2016) provided empirical evidence on how empowerment positively impacts team performance, but with clear moderation by cultural variables such as knowledge sharing and intragroup conflict management practices. These authors underline the necessity of considering cultural nuances in developing empowerment frameworks, noting significant variations in empowerment implementation and outcomes across cultural boundaries.

Hempel, Zhang, and Han (2012) further demonstrated that empowerment perceptions differ significantly depending on cultural attitudes toward hierarchy, decentralization, and organizational formalization. Such findings suggest that empowerment strategies must be adapted to specific cultural contexts to maximize effectiveness and acceptance.

Given these theoretical considerations, significant gaps persist regarding empirical comparative studies explicitly addressing how empowerment perceptions and practices manifest among students within academic teamwork environments across different cultural settings, particularly within European contexts. Consequently, this study aims to fill these knowledge gaps by examining empowerment perceptions and behaviors among management students from Spain and Poland.

Based on these considerations, this research proposes the following hypotheses:

H1: There are significant differences between Spanish and Polish students in their conceptualization of empowerment.

H2: Spanish and Polish students significantly differ in the frequency of observing empowerment-related behaviors within their teamwork contexts.

These hypotheses provide an essential analytical foundation for exploring empowerment as a culturally nuanced phenomenon, particularly within educational team contexts, thus enriching theoretical understanding and practical application in international organizational settings.

3. Materials and Methods

3.1. Data and Variables

This study employed a cross-sectional survey design conducted in October 2024. Data were collected from a purposive sample comprising 321 management students, with 76 respondents from the University of Malaga (Spain) and 245 from Jagiellonian University (Poland). Respondent demographics showed a predominance of female students (67.2%) compared to males (32.8%). Participants were engaged in academic teamwork activities within their respective institutions, predominantly working in groups consisting of 2 to 4 members.

Data were collected using a structured questionnaire specifically designed for this study, focusing on capturing respondents' conceptualizations of empowerment and their observations of empowerment-related behaviors within teamwork contexts. The questionnaire consisted of two main sections: the first explored the associative strength between empowerment and various organizational concepts, measured using a five-point Likert scale ranging from 1 (weakest association) to 5 (strongest association). The second section aimed at evaluating the frequency of specific empowerment-related behaviors observed by students during their collaborative project work, also employing a five-point Likert scale, where 1 indicated no observed presence and 5 indicated high occurrence.

3.2. Methodology

A quantitative methodological approach was adopted, utilizing descriptive statistics and non-parametric tests to analyze the data. The Mann-Whitney U test (Wilcoxon rank-sum test with continuity correction) was chosen due to its robustness for comparing ordinal data between two independent groups (Spanish and Polish students). The threshold for statistical significance was set at $\alpha = 0.05$, thus controlling the Type I error rate. Findings were interpreted using p-values, categorizing significance into three distinct levels: 95%, 99% and 99,9%.

This methodological framework aligns with best practices from existing literature on empowerment research in organizational contexts, which emphasizes clarity in defining variables and robust statistical validation (Maynard et al., 2012; Seibert et al., 2011). The selected approach also mirrors the analytical rigor demonstrated in previous empowerment studies, such as those investigating the relationship between empowerment, autonomy, and organizational behaviors in team settings (Z. Chen, Lam, Zhong, 2007; Kirkman et al., 2004; Mathieu et al., 2006).

By grounding our methodology in recognized standards and relevant empirical frameworks, this study ensures replicability and contributes valuable comparative insights into cross-cultural differences and similarities in student perceptions of empowerment within teamwork dynamics.

4. Results

The analysis revealed significant differences in how Spanish and Polish students conceptualize empowerment and the extent to which they observe empowerment-related behaviors in teamwork. Statistical significance was assessed using the Mann-Whitney U test, with a critical level of $\alpha = 0.05$.

Students primarily associate empowerment with fostering a secure and supportive work environment. As shown in Table 1, the strongest association was with "creating a work environment where employees feel secure, supported, and where they can trust their managers" ($M = 3.81$, $SD = 1.07$). Other highly rated associations included empowerment as a motivational framework ($M = 3.74$, $SD = 1.07$) and as a climate that unlocks knowledge, experience, and motivation ($M = 3.75$, $SD = 0.99$). In contrast, the least significant associations were empowerment as a human resource management method ($M = 3.26$, $SD = 1.14$) and as an approach to reducing bureaucracy in decision-making ($M = 3.26$, $SD = 1.20$).

Table 1.
Student responses to the question: What associations (words or expressions) do you have with empowerment? (N = 321)

No.	EMPOWERMENT MEANS / IS	Mean	SD
1.1	an aspect of organizational culture	3.28	1.03
1.2	unlocking knowledge, experience, motivation	3.75	0.99
1.3	a method of HR management	3.26	1.14
1.4	a philosophy covering delegation of power	3.30	1.12
1.5	giving employees autonomy & control	3.63	1.20
1.6	eradicating fear and bureaucracy	3.26	1.20
1.7	a workplace with a climate of trust	3.66	1.13
1.8	a motivational framework in an organization	3.74	1.07
1.9	an expression of proactive mindsets	3.71	1.06
1.10	open & transparent communication	3.51	1.10
1.11	promoting teamwork and mutual support	3.64	1.12
1.12	creating a secure, supportive environment	3.81	1.07

Source: Own elaboration based on: Gémar, Stańczyk, Syrytczyk (2025).

Differences between Spanish and Polish students emerged regarding empowerment perceptions. As detailed in Tables 2 and Table 3, Polish students rated empowerment as an "organizational climate that unlocks knowledge, experience, and motivation" higher than Spanish students. Additionally, Spanish students were less inclined to associate empowerment with teamwork culture and open communication.

Table 2.
Comparative responses: Spanish students' perceptions of empowerment

No.	EMPOWERMENT MEANS / IS	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1.1	an aspect of organizational culture	3	21	46	29	1
1.2	unlocking knowledge, experience, motivation	0	9	28	55	8
1.3	a method of HR management	8	26	37	22	7
1.4	a philosophy covering delegation of power	1	16	32	37	14
1.5	giving employees autonomy & control	8	16	22	32	22
1.6	eradicating fear and bureaucracy	8	18	22	39	12
1.7	a workplace with a climate of trust	7	14	26	30	22
1.8	a motivational framework in an organization	1	11	30	34	24
1.9	an expression of proactive mindsets	1	12	17	39	30
1.10	open & transparent communication	7	17	33	28	16
1.11	promoting teamwork and mutual support	3	14	25	38	20
1.12	creating a secure, supportive environment	1	11	18	36	34

Source: Own elaboration based on survey data.

Table 3.
Comparative responses: Polish students' perceptions of empowerment

No.	EMPOWERMENT MEANS / IS	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1.1	an aspect of organizational culture	5	15	35	29	16
1.2	unlocking knowledge, experience, motivation	4	8	21	40	27
1.3	a method of HR management	7	16	31	28	19
1.4	a philosophy covering delegation of power	8	18	29	30	15
1.5	giving employees autonomy & control	7	8	24	30	15
1.6	eradicating fear and bureaucracy	8	22	25	27	18
1.7	a workplace with a climate of trust	4	9	26	32	29
1.8	a motivational framework in an organization	4	10	20	37	28
1.9	an expression of proactive mindsets	3	13	22	38	24
1.10	open & transparent communication	4	13	22	41	20
1.11	promoting teamwork and mutual support	4	15	20	33	27
1.12	creating a secure, supportive environment	3	11	22	33	31

Source: Own elaboration based on survey data.

These findings indicate that cultural and educational differences shape how students perceive empowerment, with Polish students emphasizing autonomy and collaboration-driven empowerment structures.

Students reported varying degrees of empowerment-related behaviors in teamwork. As shown in Table 4, the most frequently observed behavior was contributing actively to task completion (M = 4.32, SD = 0.87), followed by sharing tasks collectively (M = 4.25, SD = 0.89) and frequent expression of opinions (M = 4.08, SD = 0.84). The least observed behavior was experiencing high levels of stress in the university environment (M = 2.94, SD = 1.33).

Table 4.
Student responses to observed empowerment practices in teamwork (N = 321)

No.	OBSERVED PRACTICE	Mean	SD
1.1	I feel empowered to make decisions	3.50	1.12
1.2	I contribute to task completion	4.32	0.87
1.3	I can decide how to perform tasks	3.91	1.06
1.4	I have control over team activities	3.54	1.05
1.5	I am able to make my own decisions	3.72	1.03
1.6	I work independently without supervision	3.60	1.21
1.7	The team leader supports initiative	3.76	1.06
1.8	I do not fear the team leader's dissatisfaction	3.57	1.21
1.9	I experience a lot of stress in university	2.94	1.33
1.10	We share tasks to be completed collectively	4.25	0.89
1.11	I have the opportunity to access decision-making situations	3.90	0.81
1.12	Planning and organizing my work depends on me	3.95	1.00
2.13	I have the opportunity to express my opinions	4.08	0.84
2.14	My opinions influence the course of the team's work	3.84	0.87
2.15	I perceive the team leader's influence on my work as supportive and interested in the progress of the work	3.66	0.99
2.16	There are no destructive factors in the team	3.67	1.24
2.17	There is support in solving problems within the team	3.86	0.99

Source: Own elaboration based on: Gémar, Stańczyk, and Syrytczyk (2025).

The Mann-Whitney U test identified significant differences between Spanish and Polish students. As summarized in Table 5, Spanish students reported lower autonomy and independent decision-making compared to Polish students.

Table 5.
Wilcoxon rank-sum test results – Spain vs. Poland

VARIABLE	U STATISTIC	P-VALUE	SIGNIFICANCE
An aspect of organizational culture	7717	0.0185	*
Unlocking knowledge, experience	7964.5	0.0441	*
HR management method	7267.5	0.0028	**
Open and transparent communication	7886.5	0.0360	*
Sharing tasks collectively	7203.5	0.0012	**
Experiencing stress in university	10704	0.0436	*

Source: Own elaboration based on survey data.

Polish students exhibited a stronger tendency toward collective task-sharing and autonomy, while Spanish students reported experiencing greater hierarchical influence in teamwork structures. These findings suggest that Polish students are more likely to experience empowerment through autonomy and shared decision-making, whereas Spanish students tend to associate empowerment with structured leadership frameworks.

The findings indicate that empowerment is primarily associated with trust, motivation, and teamwork. Respondents emphasized the importance of a supportive work environment where individuals feel secure and encouraged to take initiative. Empowerment was also linked to fostering proactive mindsets and enhancing team cohesion, reinforcing its role as a driver of collaboration and organizational success.

Among the observed behaviors, the most prominent were active participation in task completion and teamwork engagement. Students frequently reported contributing to team efforts, sharing responsibilities, and expressing their opinions. These behaviors suggest that empowerment manifests in practice through collaboration and shared decision-making processes rather than rigid hierarchical structures.

Cultural differences played a significant role in shaping empowerment perceptions and experiences. Polish students reported higher levels of autonomy and collective decision-making compared to their Spanish counterparts, who exhibited a stronger association between empowerment and structured leadership. These distinctions highlight the influence of cultural and educational contexts on the understanding and application of empowerment within teams.

Overall, these insights provide a deeper understanding of how empowerment is perceived and practiced across different cultural settings. The findings have important implications for cross-cultural management education and leadership development, emphasizing the need for adaptive strategies that recognize diverse empowerment frameworks.

5. Discussion

The results confirmed our initial hypotheses. The statistical analyses provided evidence supporting H1, indicating significant differences between Spanish and Polish students in their conceptualization of empowerment. Polish students associated empowerment more strongly with autonomy and knowledge-sharing, while Spanish students emphasized structured leadership and decision-making processes. These findings align with previous research suggesting that empowerment perceptions vary across cultures depending on organizational hierarchy and decentralization levels (Hempel et al., 2012).

Similarly, H2 was supported, as observed empowerment behaviors significantly differed between both groups. Polish students reported higher levels of collaborative decision-making and autonomy in project tasks compared to their Spanish counterparts. These results are consistent with findings from Kirkman et al. (2004), who identified that empowerment manifests differently depending on cultural and organizational settings, with greater autonomy and decision-making flexibility observed in less hierarchical environments.

The findings of this study corroborate existing literature on empowerment by reinforcing its strong association with trust, motivation, and teamwork. Prior studies have consistently highlighted the importance of psychological and structural empowerment in fostering organizational commitment and performance (Maynard et al., 2012; Seibert et al., 2011). The results indicate that students predominantly perceive empowerment as a mechanism for creating a secure, supportive, and trust-based environment, aligning with perspectives that link empowerment to increased motivation and proactive behaviors (Chen et al., 2007).

Notable cultural differences emerged, particularly in the extent of autonomy and collaborative decision-making observed by Spanish and Polish students. Polish students reported higher autonomy levels and more collective decision-making processes, which aligns with findings by Hempel, Zhang, and Han (2012), who suggested that empowerment practices are influenced by decentralization and cultural attitudes toward hierarchy. The stronger emphasis on structured leadership and supervision observed among Spanish students suggests a more hierarchical perception of empowerment, consistent with studies indicating that national culture shapes organizational behaviors and management styles (Jiang et al., 2016).

The study also found that empowerment manifests in practice through active contribution to team tasks and shared responsibility, supporting previous research that highlights the link between empowerment and improved team performance (Kirkman et al., 2004; Mathieu et al., 2006). Moreover, students from both countries identified open communication and a trust-based climate as critical components of empowerment, which aligns with literature emphasizing the role of transparent communication in fostering employee engagement and reducing uncertainty (Allen et al., 2016).

Regarding the impact of empowerment on well-being, the study revealed that stress levels were generally moderate, with Polish students reporting slightly lower stress compared to their Spanish counterparts. This finding is consistent with Savery and Luks (2001), who argued that empowerment is associated with increased job satisfaction and reduced stress when implemented effectively. However, the results suggest that cultural variations influence the extent to which empowerment mitigates stress, highlighting the need for tailored approaches when applying empowerment strategies across diverse cultural settings.

Overall, these findings contribute to the broader discourse on empowerment by providing empirical insights into its cross-cultural dimensions. They emphasize the importance of contextual factors in shaping empowerment perceptions and suggest that strategies to enhance empowerment should be adapted to specific cultural and educational environments. These insights are particularly relevant for educational institutions and organizations seeking to implement empowerment-based frameworks that promote collaboration, autonomy, and long-term engagement in diverse team settings.

6. Conclusions

This study examined cross-cultural perceptions and observed practices of empowerment among university students from Spain and Poland, offering valuable comparative insights that contribute to existing empowerment theory and practice.

6.1. Theoretical Implications

This research contributes significantly to empowerment literature by providing empirical cross-cultural comparisons. It enhances understanding of how empowerment is conceptualized in different cultural contexts, particularly within educational settings. By illustrating that Spanish and Polish students associate empowerment strongly with trust, autonomy, and organizational climates promoting proactive mindsets, the study aligns with previous theoretical frameworks by Mathieu, Gilson, and Ruddy (2006) and Kirkman et al. (2004), underscoring autonomy, communication, and motivational frameworks as crucial empowerment dimensions.

Moreover, this study extends prior empowerment research by empirically examining the dimensions of empowerment specifically within academic team environments, thus opening avenues for further research on empowerment as an educational and organizational development tool.

6.2. Practical Implications

Practically, this study offers valuable insights for educators and organizational leaders. The highlighted importance of a supportive and trusting climate suggests that universities and businesses should actively foster environments characterized by open communication and mutual trust. Results indicating cultural differences suggest tailored strategies are essential when implementing empowerment-based practices across diverse student or employee populations.

Universities could utilize these findings to refine teamwork-based curricula, focusing on autonomy and collective task-sharing approaches that enhance student satisfaction and effectiveness. Furthermore, human resource professionals and managers can leverage these insights to cultivate organizational cultures that better support autonomy, proactivity, and open communication across diverse teams.

6.3. Limitations and Future Research

The limitations of this study include its reliance on self-reported data, potentially influenced by subjective perceptions or response biases. Additionally, the cross-sectional nature of the research restricts causal interpretations of empowerment's effects on team performance.

Future studies could expand the scope by including longitudinal methodologies or experimental designs to better explore causality. Additionally, subsequent research could explore the role of leadership styles and other contextual variables influencing empowerment perceptions and behaviors in diverse cultural and organizational contexts. Further qualitative research could also enrich understanding by exploring deeper individual experiences of empowerment in teamwork.

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PERCEIVED BRAND QUALITY AND ITS RELATIONSHIP WITH BRAND TRUST AMONG GENERATION Z CONSUMERS

Jolanta TARAPATA

Military University of Technology in Warsaw, Faculty of Security, Logistics and Management, Institute of Management; jolanta.tarapata@wat.edu.pl, ORCID: 0000-0002-0783-6295

Purpose: The main goal of this article is to present the relationship between Generation Z consumers' perception of the quality of their favourite brand and their brand trust. Specific goals include understanding Generation Z consumers' perception of the quality of their favourite brand, measuring their brand trust, determining the correlation between perceived brand quality and brand trust, and identifying which demographic factors statistically significantly differentiate respondents' perception of brand quality and their declared brand trust.
Design/methodology/approach: The study was conducted on a sample of 500 consumers in August-September 2023 throughout Poland. The method used in the study was a diagnostic survey. The Kruskal-Wallis test, Mann-Whitney U test, and Spearman's rho correlations were used for statistical analysis. The research sample was selected at random. The study involved people aged 18 to 28 who follow clothing brands on social media.
Findings: The study showed a strong, positive relationship between perceived brand quality (assessed, among other things, by reliability, excellent features/experience) and trust in the brand. The higher the brand quality is rated, the greater the trust in it. Gender is the strongest factor differentiating the perception of quality and trust. The component "I think it's an honest brand" proved to be universal for both genders and strongly correlated with the belief that the brand is worth its price. The statement about offering a high-quality experience received the highest average rating and was one of the few that was not differentiated by gender or age.
Research limitations/implications: The results of the study prompt a more in-depth analysis of perceived brand quality and Generation Z consumers' trust in brands. One suggestion would be to conduct a study aimed at identifying the factors that determine the different attitudes of Generation Z women and men towards the assessment of the quality of the brands they use, and to break down the concept of "experience" into its constituent factors, i.e., speed of delivery, customer service, personalization, in order to identify which element of the purchasing path has the greatest impact on building trust.
Practical implications: This article provides practical recommendations for managers and marketing strategists, emphasizing the need to deliver high-quality products and investing in building positive customer experience. It also recommends demographic segmentation based on gender in marketing strategies aimed at Generation Z.
Originality/Value: Despite considerable interest in the relationship between perceived brand quality and brand trust, the marketing literature shows an insufficient number of studies focusing on Generation Z consumers. Filling this research gap is of strategic importance. Given

the size and purchasing power of Generation Z, understanding their specific expectations and trust-building mechanisms is crucial for companies.
Keywords: brand, quality, perceived brand quality, brand trust.
Category of the paper: research paper.

1. Introduction

The modern consumer market is characterized by dynamic changes in buyer behaviour, forcing brands to constantly search for effective strategies to build lasting relationships with customers. In this context, two fundamental concepts: perceived brand quality and brand trust, are gaining importance as key determinants of market success.

Perceived quality is a consumer's subjective assessment of the overall excellence or superiority of a product or service compared to others. In marketing literature, it is recognized as a key element of *brand* equity that influences consumers' purchasing decisions. The theory of perceived value suggests that the higher the perceived quality, the greater the likelihood that the consumer will trust the brand, which in turn is the foundation for building a lasting relationship with the brand.

Generation Z is a very specific group in the consumer market. It is characterized by a critical approach to brands and high expectations of their products**.** It definition of "quality" is much broader than that of previous generations. For Generation Z, brand quality is measured not only by the functional characteristics of products, such as durability or reliability, but also by the values that the brand represents, their experiences, and the opinions of other people. To meet these demands, brands must take a holistic approach to their value proposition. This is essential because, for this generation, these values have become integral components of perceived quality and trust.

Despite growing interest in the relationship between perceived brand quality and brand trust, the marketing literature still shows an insufficient number of studies focusing on Generation Z consumers. This research gap is particularly significant given that Generation Z is one of the largest and most influential demographic groups in the consumer market. The lack of detailed research on their specific mechanisms of quality perception and trust building means that companies may operate on incomplete information, making it difficult to effectively reach this key market segment and build lasting relationships with it.

This article aims to fill this gap by contributing to marketing theory and providing recommendations for managers, enabling them to build more effective relationships with this consumer group. The main objective of the article is to present the relationship between Generation Z consumers' perception of the quality of their favourite brand and their trust in the brand.

Within this main objective, the following intermediate objectives have been identified: To understand Generation Z consumers' perception of the quality of their favourite brand; To measure Generation Z consumers' trust in the brand; To determine the correlation between perceived brand quality and brand trust; To learn which demographic factors (gender, age, professional status, and place of origin of the respondent) statistically significantly differentiate the way respondents perceive brand quality and their declared trust in the brand.

In light of the objectives set, the main hypothesis adopted in this study is that the brand quality perceived by Generation Z consumers is related to their trust in the brand.

2. Theoretical basis for the perceived brand quality of Generation Z consumers

Perceived brand quality is an important factor influencing how consumers perceive and evaluate a given brand's products. It can be defined as a customer's assessment of the advantages, excellence, credibility, and differences of a given brand compared to other brands. It is worth noting that consumers build their own quality parameters in their minds. Perceived quality is not the same as actual quality – it is based on the recipient's impression and experience, which may or may not correspond to the actual characteristics of the product, and therefore differs from the concept of actual quality (Dębski, 2009). As Bielski and Bielska-Dąbrowa (2014) emphasize, a strong brand is built not only through the actual quality of the product, but above all through the ability to shape positive consumer beliefs about that quality. This is because it refers to the consumer's subjective perception of how a given brand is viewed in relation to others.

Both the actual quality of the products offered and the quality that results from the buyer's perceptions of the brand directly influence the opinion about the brand, its perception, and thus its position in the market among competitors (Przybylska, 2010). When choosing a product, quality is one of the factors considered by consumers in determining whether the choice is appropriate and meets their needs or not (Budiyono, Sulistyo, 2022). In this sense, perceived quality constitutes added value. High perceived quality can lead to greater trust in the brand, manifested in an increased willingness to repurchase. In addition, consumer respect for the brand is linked to the perception of brand quality. In order for a brand to gain respect among consumers, it must be associated with the expected quality (Tarapata, 2017).

The quality of a brand as perceived by Generation Z consumers is the result of many factors. In the digital economy, traditional product quality paradigms based on objective technical parameters are giving way to subjective perceptions shaped by customer experience and, above all, social media. For Generation Z, brand quality is not an autotelic value, but rather the result of its presence in the digital sphere and recommendations from opinion leaders. Influencers act

as quality curators, selecting brands that, in the opinion of consumers, gain the status of "proven" and "trustworthy" (Awdziej, Tkaczyk, 2017). Social media has changed the definition of quality from "durability" to "image utility". A high-quality product is one that is aesthetically suited to the visual standards of platforms such as TikTok or Instagram. Furthermore, a brand that is promoted by an influencer involved in the *slow fashion* or ecology movement automatically gains a higher quality rating. This phenomenon is confirmed by J. Suchecka, who describes the attitudes of young people for whom purchasing choices are a form of ideological manifestation (Suchecka, 2020). In this view, a brand embroiled in an ethical scandal loses its status as a "quality" brand, while a brand that is committed to sustainable development may be perceived as one of higher quality (Deloitte, 2021).

The specificity of Generation Z's perception of quality is associated with highly dynamic changes. For example, a communication error by an influencer or inconsistency between their actions and the brand's values leads to an immediate devaluation of the product's quality in the eyes of the consumer. In this sense, quality is a continuous process rather than an acquired state. J. Kotarbiński notes that in the world of social media, "a brand is what others say about it" (2014, p. 215) which in the case of Generation Z means that quality is determined by current sentiment in *user-generated content* comments and reviews.

Therefore, for Generation Z, the perceived quality of a brand is determined not only by its functional characteristics, reputation, or consumer experience related to its use, but also by how it is communicated. Perceived brand quality is an individualized subjective assessment by the consumer; it is not synonymous with actual quality.

3. The relationship between perceived brand quality and brand trust – a theoretical approach

Brand trust is understood as a feeling of security and reliability of the brand (Veloutsou, 2015), experienced by the consumer in their interaction with the brand, which is based on the belief that the brand is credible, reliable, and responsible for the interests and well-being of the consumer, and that it fulfils or exceeds its promises and customer expectations (Dobiegała-Korona, 2009). This belief builds trust, which is the foundation of consumer loyalty, long-term relationships, and the commitment of exchange participants.

Generation Z represents a group of buyers with specific psychographic characteristics. In their case, the relationship between perceived quality and trust is strongly moderated by the authenticity of communication. Consumers of this generation often use social media and the opinions of other users to gather information about brands. This generation is particularly sensitive to false information and manipulation. Therefore, a brand that is transparent and fully discloses its business practices is more likely to gain their trust. Any deviation from the declared

quality is interpreted by this age group as a lack of transparency, leading to an immediate erosion of trust.

Three aspects of quality are key in building trust in a brand among Generation Z consumers (Stasiuk, Maison, 2020): product reliability and innovation; efficiency of service and speed of response in digital channels; and alignment of brand activities with social and environmental values. The impact of quality on trust among young consumers is cumulative. This means that for a young consumer, a single mistake can destroy the trust built by a great product. Therefore, traditional models of trust based solely on product reliability are insufficient for younger generations. According to J. Wiktor (2013), Generation Z is more likely than other generations to verify perceived quality through online reviews and social media, which means that trust in a brand becomes a combination of personally experienced quality and quality communicated by the digital environment.

In summary, in the age of widespread access to information, brand quality is verified almost in real time, which means that brand trust in this segment must be constantly confirmed through high-quality communication and product processes. As J. Grzesiak (2019) points out, Generation Z treats the brand as a partner from whom they expect not only functional products, but also stylistically attractive ones that are tailored to their individual needs, as a starting point for building deeper relationships and trust.

4. The relationship between brand quality perception and brand trust in the opinion of Generation Z consumers – methodology and analysis of own research

Research on the attitudes and behaviors of Generation Z consumers towards clothing brands, undertaken as part of UGB research grant No. 853, was conducted on a sample of 500 consumers in August-September 2023 throughout Poland. The method used in the study was a diagnostic survey, Kruskal-Wallis test, Mann-Whitney U test, and Spearman's rho correlations were used for statistical analysis. The research sample was selected at random. People aged 18 to 28 who follow clothing brands on social media were recruited for the study. The quantitative structure of respondents adopted in the study comprised four layers, i.e., gender, age, professional status, and the respondent's place of origin[1]. The study covered several areas. One of them was the perception of the quality of clothing brands purchased by respondents. The aim of the research in this area was to understand how Generation Z

[1] The quantitative structure of the respondents in each stratum was as follows: gender: 50% women, 50% men; location: rural areas – 20%, towns with a population of less than 50,000 – 20%, towns with a population of between 50,000 and 100,000 – 20%, towns with a population of 100,000 to 200,000 – 20%, towns with a population of over 200,000 – 20%; age: 18 to 22 years old – 50% and 23 to 28 years old – 50%; professional status: exclusively studying, exclusively working, studying and working, not working and not studying.

consumers perceive the quality of their favourite brands and to demonstrate the relationship between brand perception and consumer trust in the brand. The study used a seven-point scale: strongly disagree, disagree, somewhat disagree, no opinion, somewhat agree, agree, strongly agree.

The issue of Generation Z consumers' perceptions of the quality of their favourite brands was reduced to five statements that respondents referred to in their assessment (figure 1), i.e., *The brand I buy is high quality*, *The brand is worth the price*, *The brand has a consistent level of quality*, *The brand offers a high-quality experience*, *The brand's clothing has excellent properties*. These scales were taken from existing literature (Dwivedi, 2015) but adapted to the context of this study.

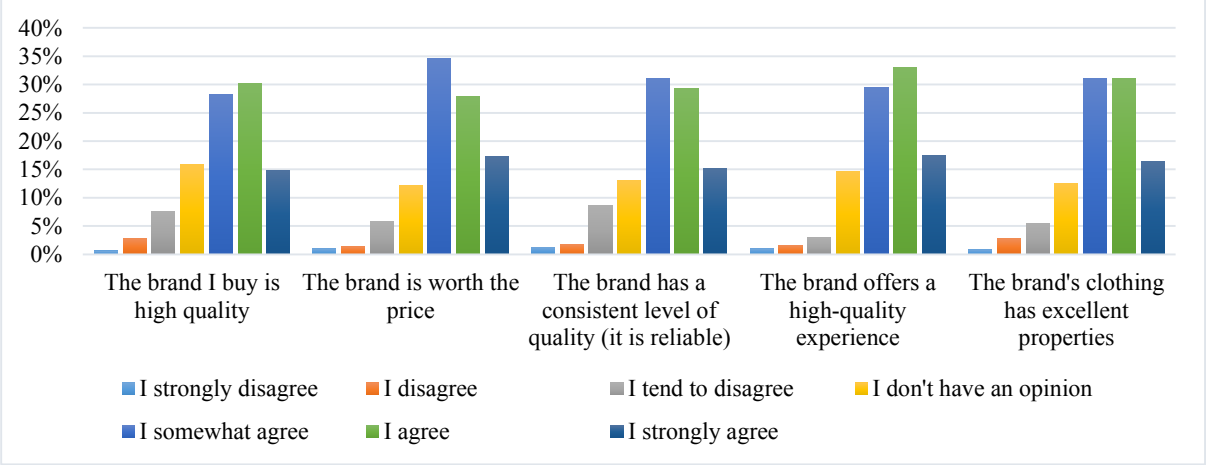

Figure 1. Perception of the quality of Generation Z consumers' favourite brand (N = 500).
Source: own study.

An analysis of the data in figure 1 shows that Generation Z consumers rate the brands they buy highly. As many as 80.0% of respondents said that the brand they buy is worth the price, 79.0% said that the brand offers them a rich experience, e.g., it provides convenience of purchase, and 78.0% said that the clothing they buy has excellent properties, e.g., it retains its colours and is durable in use. A slightly smaller percentage of respondents (73.0%) believe that the brand they buy is of high quality, and 75% believe that this quality is reliable. It can therefore be assumed that what Generation Z consumers buy is important to them. Their choices are guided by the need to purchase good-quality clothing that will serve them for longer, will not wear out quickly, will prove reliable, but will also provide a rich experience both in terms of purchase and subsequent use. A small percentage of consumers surveyed (13.8% on average) have no opinion on the statements included in the figure regarding the perceived quality of the brand they purchase. For this percentage of respondents, it can be assumed that their clothing purchasing behaviour is not preceded by reflection on the quality of the products they buy, or that the quality of the brand and its products is irrelevant to them. Among the respondents, there are also those who deny the good quality of the brand they buy.

The largest percentage of respondents (12.0% on average) deny that the brand they buy has a consistent level of quality, and 11.0% deny that it has good quality at all.

The distribution of respondents' answers presented in figure 1 is reflected in the average ratings, which are all above 5 on a seven-point scale, i.e., they show a high level of brand quality perception (Table 1).

Table 1.
Descriptive statistics for respondents' ratings of behaviours in the area of brand quality perception

Perceived brand quality	Average	Median	Dominant	Standard deviation
The brand I buy is high quality	5.18	5.00	6	1.294
The brand is worth the price	5.30	5.00	5	1.232
The brand has a consistent level of quality (it is reliable)	5.19	5.0	5	1.302
The brand offers a high-quality experience (e.g., convenience of purchase)	5.38	6	6	1.205
The brand's clothing has excellent properties (e.g., it is durable, retains its colours)	5.29	5	5	1.268

* There are many modal values. The lowest value is given.

Source: own study.

A three-point scale taken from the literature (Chaudhuri, Holbrook, 2001) was used to measure consumer trust in the brand, which was also modified for the purposes of the study. It included three statements: *I trust this brand*; *I think it is an honest brand*; *The brand never disappoints me* (figure 2).

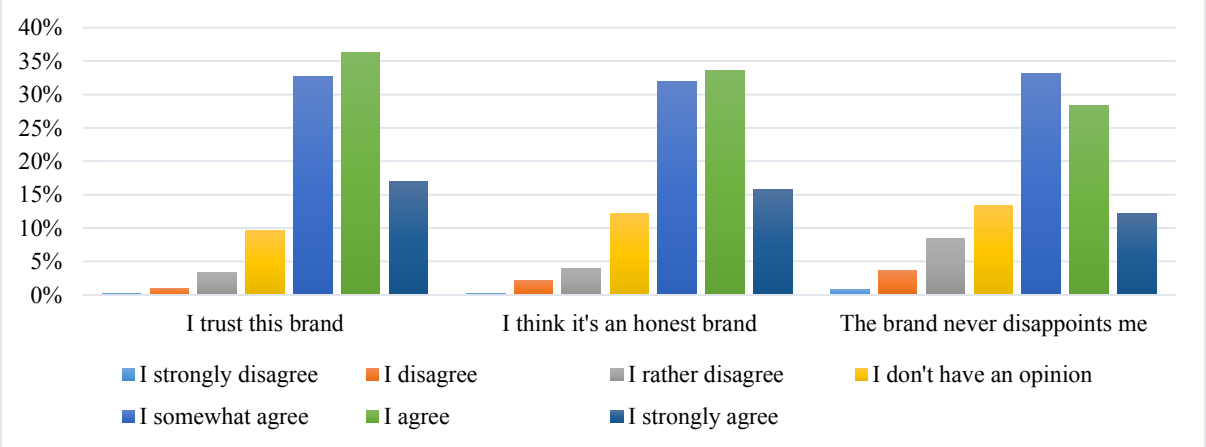

Figure 2. Trust in the favorite brand of Generation Z consumers (N = 500).

Source: own study.

A very high percentage of respondents (80.3% on average) declare their trust in their favourite brand. Among this group, 86% of respondents say they trust the brand, while slightly fewer (73%) rely on the brand, saying that it never disappoints them. It can be assumed that such high ratings are related to positive feelings towards the brand. A favourite brand is one that evokes positive emotions, a need to interact with it and identify with it. However, despite such high confirmation, an average of 8% of respondents do not declare their trust in it, and 11.7% have no opinion on whether their favourite brand is honest, reliable, and trustworthy.

In this case, too, the distribution of respondents' answers shown in figure 2 is reflected in the average ratings, which are all above 5 on a seven-point scale, indicating a high level of consumer trust in the brand (Table 2).

Table 2.
Descriptive statistics for respondents' ratings of behaviours in the area of brand trust

Brand trust	Average	Median	Dominant	Standard deviation
I trust this brand	5.50	6.0	6	1.072
I think it's an honest brand	5.38	5	6	1.158
The brand never disappoints me	5.09	5	5	1.300

Source: own study.

In order to show the relationship between Generation Z consumers' perception of brand quality and their trust in the brand, Spearman's rho correlation test was used. As shown in Table 3, the higher the perceived brand quality, the greater the trust in the brand. This applies to all statements adopted for both brand quality assessment and brand trust. The strongest correlation is between respondents' perception of the brand as one whose clothing has excellent properties (it is durable and retains its colours) and their belief that the brand never disappoints them, as well as between the perception of the brand as one that is worth its price and respondents' belief that it is an honest brand.

Table 3 is key empirical evidence supporting the main hypothesis of the study. It shows that brand trust is not built on a single dimension of quality, but rather on a synergistic combination of tangible product attributes, overall customer experience, and perceived brand integrity and alignment with consumer values. Marketers can use these specific correlations to understand which aspects of perceived quality most effectively build specific dimensions of trust, which can guide their strategic investments.

The research also aimed to determine whether the independent variables adopted in the study, i.e., gender, age, professional status, and the respondent's place of origin, statistically significantly differentiate the way respondents perceive brand quality and their declared trust in the brand.

The age structure of Generation Z respondents was divided into three groups: 18-20 years old; 21-24 years old; 25-28 years old. Due to the age of the respondents, it was found that only in two statements concerning the perceived quality of the brand, i.e., *The brand is worth its price* and *The brand has a consistent level of quality (it is reliable)*, the responses of respondents from the above-mentioned age groups differ significantly statistically. The same applies to the statement: *I think it is an honest brand*. The remaining responses of respondents of different ages, concerning both perceived brand quality and brand trust, are not statistically significantly different (Table 4).

Table 3.
Spearman's rho correlations between respondents' ratings for behaviours in the areas of brand quality perception and brand trust

			Perceived brand quality				
			The brand I buy is of high quality	The brand is worth its price	The brand has a consistent level of quality (it is reliable)	The brand offers a high-quality experience (e.g., convenience of purchase)	The brand's clothing has excellent properties (e.g., it is durable, retains its colours)
Trust in the brand	I trust this brand	Correlation coefficient	**0.511****	**0.515****	**0.520****	**0.488****	**0.530****
		Significance (two-tailed)	<0.001	<0.001	<0.001	<0.001	<0.001
		N	500	500	500	500	500
	I think it's an honest brand	Correlation coefficient	**0.529****	**0.564****	**0.534****	**0.476****	**0.495****
		Significance (two-tailed)	<0.001	<0.001	<0.001	<0.001	<0.001
		N	500	500	500	500	500
	The brand never disappoints me	Correlation coefficient	**0.555****	**0.532****	**0.530****	**0.520****	**0.565****
		Significance (two-tailed)	<0.001	<0.001	<0.001	<0.001	<0.001
		N	500	500	500	500	500

** Correlation significant at the 0.01 level (two-tailed).

Source: own study.

Table 4 shows that age has a limited impact on the perception of quality and trust within Generation Z, suggesting a certain homogeneity of consumer behaviour in this regard. Other independent variables included in the study were the respondents' professional status and place of origin.

Table 4.
Kruskal-Wallis test for independent samples – criterion of respondent age

H0	Significance[a,b]	Decision
Distribution **The brand I buy is of high quality** is the same for **the Age** category.	0.155	No basis for rejecting H0
The distribution of **the brand being worth its price** is the same for the **Age** category.	**0.009**	**Reject H0**
The distribution **of Brand has a constant level of quality (it is reliable)** is the same for the **Age** category.	**0.011**	
The **Marka** distribution **offers a high-quality experience (e.g., convenience of purchase) and** is the same for the **Age** category.	0.399	No basis for rejecting H0
The distribution **of Brand clothing has excellent properties (e.g., it is durable, retains its colors)** is the same for the **Age** category.	0.195	
The distribution **of I trust this brand** is the same for **the Age** category.	0.076	
The distribution **of "I think this** is **an honest brand"** is the same for **the Age** category.	**0.001**	**Reject H0**
The distribution **of "The brand never disappoints me"** is the same for the **Age** category.	0.081	No basis for rejecting H0

a. The significance level is 0.050.
b. Asymptotic significance is presented.

Source: own study.

The Kruskal-Wallis test proved that neither the professional status nor the place of origin of the respondents is a variable that significantly differentiates them in terms of perceived brand quality or declared trust in the brand (Table 4). The lack of differentiation according to these variables suggests that the shared experiences of Generation Z may outweigh traditional socio-economic and geographical divisions in the context of clothing brand perception.

The factor that statistically differentiated respondents' perceived brand quality and trust turned out to be their gender (Table 5).

Table 5.
Mann-Whitney U test for independent samples – gender criterion of respondents

H0	Significance [a,b]	Decision
Distribution **The brand I buy is high quality** is the same for the **Gender** category.	**<0.001**	**Reject H0**
The distribution of **"The brand is worth the price"** is the same for the **Gender** category.	**0.016**	
The distribution **of Brand has a consistent level of quality (it is reliable)** is the same for the **Gender** category.	**<0.001**	
The distribution **of Brand offers a high-quality experience (e.g., convenience of purchase)** is the same for the **Gender** category.	0.976	No basis for rejecting H0
The distribution **of Brand clothing has excellent properties (e.g., it is durable, retains its colors)** is the same for the **Gender** category.	**<0.001**	**Reject H0**
The distribution **I trust this brand** is the same for the **Gender** category.	**0.004**	
The distribution **of "I think this** is **an honest brand"** is the same for the **Gender** category.	0.083	No basis for rejecting H0
The distribution **of "The brand never disappoints me"** is the same for the **Gender** category.	**0.003**	**Reject H0**

a. The significance level is 0.050.
b. Asymptotic significance is presented.

Source: own study.

Despite shared generational characteristics, there are clear differences between male and female Generation Z consumers in their approach to perceived quality and trust in the clothing sector, likely resulting from different product needs, aesthetic preferences, or social influences. The fact that *high-quality experience* and *honest brand* are not differentiated by gender suggests that these are universally important attributes for the entire generation, regardless of gender.

5. Summary

The analysis of the conducted research results confirms the hypothesis stated in the study: perceived brand quality has a statistically significant relationship with consumers' trust in the brand. This relationship is directly proportional in nature. These results correspond with the broader body of literature on the subject, indicating the existence of a positive correlation between these variables. (Marakanon, Panjakajornsak, 2017; Alhaddad, 2015; Alan, Kabaday, 2014).

Based on the results of the research obtained, key conclusions can be formulated, which carry significant practical recommendations for managers and marketing strategists:

- There is a strong correlation between Generation Z consumers' perception of brand quality and trust. The higher the brand quality is rated, the greater the trust in it.
- The research confirmed the high overall rating of brands. Generation Z consumers declare a high level of trust and positively evaluate the quality of their favourite brands.
- The strongest association with the belief that a brand "never disappoints" is with the excellent properties of clothing (durability, colour retention). Therefore, marketing campaigns should highlight evidence of durability (e.g., washing tests, material quality).
- The perception of a brand as "fair" is most strongly correlated with the belief that it is worth its price. Therefore, the pricing strategy should not be based solely on low costs, but on transparent communication of value.
- Gender is the main factor differentiating the perception of quality and trust. For this reason, marketing strategies should be separately profiled for women and men in terms of product functional characteristics. Gender does not differentiate only in the assessment of "high-quality experience" and "brand honesty," which makes these characteristics universal for the entire Generation Z and allows for universal communication on these issues.
- Age has a limited impact on the perception of brand quality and trust, while consumers' place of residence and occupational status do not significantly differentiate their attitudes towards brands. Therefore, marketers can use nationwide, uniform social media campaigns without the need for strong geographic or economic segmentation within this age group.
- More than three-quarters of respondents appreciate a high level of brand experience, including convenience of purchase. In order to build trust in the brand, it is recommended to invest in creating a positive customer experience and a smooth purchasing process.
- For most respondents, choosing clothing is a reflective process – they are guided by the need for durable, reliable products that provide a good shopping experience. Only a small group shows a lack of reflection on the quality of the products they buy

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ORGANIZATIONAL JUSTICE AND PSYCHOSOCIAL SAFETY CLIMATE (PSC) AS DETERMINANTS OF EFFECTIVENESS IN AGE-DIVERSE HIERARCHICAL STRUCTURES

Łucja WALIGÓRA

University of Economics in Katowice; lucja.waligora@uekat.pl, ORCID: 0000-0002-1132-6060

Purpose: The study aims to identify the mechanisms mediating the relationship between age-rank correlation (ARC) and financial performance, considering the moderating role of organizational justice and the mediating role of psychosocial safety climate (PSC).
Design/methodology/approach: A quantitative study was conducted on a sample of N = 300 employees from large enterprises. Moderated mediation modeling (PROCESS Model 83) was employed to integrate demographic, psychosocial, and operational variables (flexibility and innovativeness) into a single analytical framework.
Findings: Results indicate that age-rank correlation stimulates PSC only under conditions of high organizational justice. The study confirms a serial mediation path where high PSC levels enhance flexibility and innovativeness, subsequently driving financial performance. Organizational justice emerges as a crucial stabilizer that legitimizes non-traditional hierarchical structures.
Research limitations/implications: The cross-sectional nature of the study limits causal inference. Future research should utilize longitudinal designs and include objective financial data or industry-specific analyses (e.g., the IT sector), where age-related norms are undergoing dynamic shifts.
Practical implications: The findings suggest to HR managers that deviating from seniority-based promotions (e.g., appointing young leaders) requires transparent appraisal systems. Investing in PSC is economically justified, as it serves as a direct stimulator of a firm's adaptive potential.
Social implications: The paper supports the fight against ageism and promotes inclusivity. Demonstrating the benefits of diverse age structures helps shift attitudes toward young leaders and older employees while promoting mental health standards in the workplace.
Originality/value: The unique contribution of this work is the integration of career timing theories with the PSC framework. The study fills a research gap by proving that organizational justice, rather than age structure alone, is the foundation of effective diversity management. The use of PROCESS Model 83 allows for a precise capture of multidimensional dependencies previously studied only in fragments.
Keywords: age-rank correlation, psychosocial safety climate (PSC), organizational justice, innovativeness, organizational outcomes, Model 83 PROCESS.
Category of the paper: research paper.

1. Introduction

The theoretical framework for this analysis is based on the integration of career timetable theory and social exchange theory. The former assumes the existence of informal age norms regarding the pace of promotion; employees develop subjective expectations concerning the age at which specific hierarchical levels should be reached (Cleveland et al., 2017; Lawrence, 1984, 1988; Settersten, Mayer, 1997). Individuals who find themselves "off-time" may be perceived as violating the social order, which often results in decreased engagement and a heightened sense of discrimination (Kunda et al., 2003; Perry et al., 1999).

In turn, social exchange theory explains that organizational effectiveness depends on the quality of relationships and the principle of reciprocity (Blau, 2017; Cropanzano, Mitchell, 2005). Perceiving the organization's actions as fair and supportive, including a commitment to the psychosocial safety climate (PSC), motivates employees to engage in behaviors that go beyond their formal duties (Dollar & Bakker, 2010; Eisenberger et al., 1986; Gould-Williams, 2007; Organ, 1988).

Integrating these two theories allows for the demonstration that the correlation between age and position does not affect firm performance in a vacuum. It is the social exchange mechanism, moderated by the perception of justice, that determines whether the disruption of traditional career timetables is interpreted as a manifestation of modernization or as a breach of the psychological contract leading to organizational dysfunction (Rousseau, 1995; Tsui et al., 1997).

2. Research model and theoretical justification of hypotheses

This study proposes a complex theoretical model aimed at explaining the mediating mechanisms in the relationship between an organization's demographic-hierarchical structure and its financial performance. The starting point is Hypothesis 1, which concerns the moderating role of organizational justice. According to career timetable theory, organizations operate under deeply rooted social norms that define the appropriate age for specific hierarchical levels (Lawrence, 1984, 1988). A situation in which the age-rank correlation is weak, for instance, when young managers supervise senior employees, may be interpreted as a breach of the psychological contract and traditional social expectations (Cleveland Cleveland et al., 2017; Perry et al., 1999).

However, drawing on Social Exchange Theory (Blau, 2017; Cropanzano, Mitchell, 2005), organizational justice across its three dimensions: distributive, procedural, and interactional (Colquitt, 2001; Niehoff, Moorman, 1993), allows for the legitimation of such deviations. If promotion criteria are perceived as fair, meritocratic, and based on objective competencies, a non-traditional age structure does not foster a climate of threat or discrimination (Gilliland et al., 2000; Posthuma, Campion, 2009). Under these conditions, the organization facilitates the building of a psychosocial safety climate (PSC). Thus, justice acts as a moderator that determines whether the age-position correlation is positively integrated into the organization's safety culture.

H1. The relationship between the age-position correlation and the perceived psychosocial safety climate (PSC) in the organization is moderated by organizational justice.

The subsequent part of the model, outlined in Hypothesis 2, assumes that the Psychosocial safety climate (PSC) is a key resource determining non-financial outcomes. According to the framework by Dollard and Bakker (2010), PSC serves as the "cause of causes", defining management priorities regarding mental health protection, which precedes the development of specific working conditions (Dollar, Bakker, 2010; Loh et al., 2020). A high level of PSC reduces the fear of failure and supports psychological safety (Baer, Frese, 2003), which is essential for organizational innovativeness (H2a). Simultaneously, a climate that supports well-being enhances organizational flexibility (H2b), as employees in a safe environment adapt more quickly to change, exhibit higher psychological resilience, and show a greater readiness to redefine their professional roles (Schaufeli et al., 2020; Grawitch et al., 2006).

H2. The perceived psychosocial safety climate in the organization is positively correlated with non-financial outcomes: organizational innovativeness (H2a) and organizational flexibility (H2b).

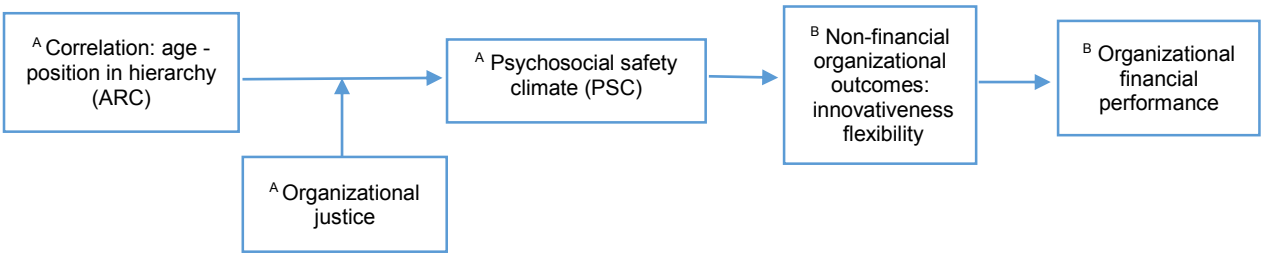
The relationship between the process-oriented and economic spheres is described in Hypothesis 3. The literature consistently indicates that innovativeness is essential for operational optimization and the creation of unique market value, which directly translates into competitive advantage (Hitt et al., 1997; Hurley, Hult, 1998). In turn, flexibility allows for the minimization of losses resulting from organizational inertia and enables better alignment with a turbulent environment (Zahra et al., 2006). Theoretically, these non-financial indicators serve as direct links (H3a, H3b) leading to improved financial health through more efficient use of human capital and knowledge resources (Nonaka, 1994; Smith et al., 2005).

H3. Non-financial outcomes: organizational innovativeness (H3a) and organizational flexibility (H3b) are positively related to the organization's financial performance.

The entirety of these theoretical considerations is integrated into Hypothesis 4, which assumes the existence of a sequential moderated mediation mechanism. Social Exchange Theory suggests that an organization providing employees with a sense of justice (Gould-Williams, 2007) and safety (PSC) receives in return their intellectual capital, creativity, and readiness for change, which ultimately builds financial success (H4a1, H4b1, H4c1). A key assumption is that this entire process is conditioned by organizational justice (H4a2). Without fair foundations, the age-rank structure may generate a perceived climate of discrimination (Kunze et al., 2011), which blocks the path of innovation and flexibility, preventing the achievement of optimal financial results. Serial mediation thus allows for the understanding that economic outcomes are the end result of a chain of psychological and organizational reactions, initiated by demographic structure and filtered through a sense of institutional integrity (Rousseau, 1995; Tsui et al., 1997).

H4. The indirect relationship between the age-position correlation in the organization's hierarchy and the organization's financial performance, which is serially mediated by the perceived psychosocial safety climate (H4a1) and non-financial outcomes: innovativeness (H4b1) and organizational flexibility (H4c1),is moderated by organizational justice (H4a2).

The above relationships have been integrated into the research model presented in Figure 1. The individual arrows in the model describe the interconnected relationships between the variables:



Data sources for variables: * A - employee surveys; B - senior management surveys. The study assumes that senior management members are best positioned to assess organizational outcomes (e.g., Lin et al., 2020; Lubatkin et al., 2006).

Figure 1. Research model concept.

Source: Own elaboration.

3. Research methodology

The study involved a purposive sample of N = 300 employees from large enterprises in Poland. Data were collected across 75 units, employing a parity-based respondent selection (4 individuals per organization) representing a full cross-section of the organizational hierarchy: from entry-level positions to senior management. This sample structure eliminated overrepresentation bias and ensured numerical equivalence among the comparative groups. The analysis revealed a statistically significant correlation between age and professional position ($r = 0.196$; $p < 0.001$), confirming the persistence of traditional age norms within organizational structures while maintaining measurement objectivity across all management levels.

Each variable was measured using validated instruments with established reliability. The primary independent variable, age-rank correlation, was calculated based on self-reported age and affiliation with one of five hierarchical categories. The methodology developed by Pfeffer and Langton (1993) and Lazear (1981) was utilized, where coefficient values range from -1 to 1. Positive values indicate a traditional career model (older age associated with higher rank), whereas negative values point to a reversal of these norms (De Meulenaere et al., 2024).

Psychosocial safety climate ($\alpha = 0.98$) (PSC) was assessed using the Psychosocial safety climate Survey (Dollard, Kang, 2007; Hall et al., 2010). This 26-item instrument analyzes four key dimensions: management support and commitment, management priority, organizational communication, and employee participation in the area of mental health protection. Organizational Justice ($\alpha = 0.87$) was operationalized as a three-dimensional construct (procedural, distributive, and informational justice), measured using ten test items (Cho, Sai, 2013; Bright, 2007).

In the area of non-financial outcomes, two key aspects were measured. Organizational Innovativeness ($\alpha = 0.95$) was evaluated using a nine-item scale of innovative job performance (Janssen, 2001), covering stages from idea generation to evaluation (Scott, Bruce, 1994). Organizational Flexibility ($\alpha = 0.86$) was measured using an eight-item scale by Habibullah and Kamal (2024), examining the firm's adaptive capacity to market, legal, and social changes. Financial Performance ($\alpha = 0.78$) was examined using a subjective composite scale (Yu et al., 2013; Sok et al., 2016). Respondents assessed the firm's financial health relative to competitors over the past three years, considering employment growth, net sales, market share, and net profit.

4. Research results

In order to examine the interdependence between employees' age and their position in the organizational hierarchy, a Pearson's r correlation analysis was conducted. The correlation analysis (N = 300) revealed a statistically significant, positive relationship between age and position in the organizational hierarchy ($r = 0.196$; $p < 0.001$), indicating that as the age of the respondents increases, so does their professional level on a scale of 1-4. Despite the weak effect size, the high significance of the result confirms that the promotion process in the surveyed enterprises is partially conditioned by chronological age, reflecting the importance of tenure and experience in shaping career paths.

The verification of complex structural dependencies was performed using moderated mediation modeling (PROCESS macro, Model 83), which allowed for a precise estimation of direct and indirect effects while accounting for variable interactions at specific stages of the model (Hayes, 2022).

First, the predictors of the Psychosocial safety climate (PSC) were examined. Regression results indicate that this model significantly explains the variance of the dependent variable ($R2 = 0{,}287$; $F(3, 296) = 39{,}72$; $p < 0{,}001$). A significant interaction effect between the age-rank correlation and organizational justice on the formation of the safety climate was confirmed ($\beta = 0{,}29$; $se = 0{,}06$; $p < 0{,}001$). In accordance with the principles of conditional process analysis (Hayes, 2022), this interaction increases the explained variance by 6,5% ($\blacktriangle R2 = 0{,}065$; $p < 0{,}001$).

A detailed conditional effects analysis (Simple Slopes) revealed that the impact of the age-rank correlation on PSC is non-significant under conditions of low organizational justice (effect = 0,01; p = 0,736). However, in organizations with high levels of justice, this correlation becomes a strong, positive predictor of a safe climate (effect = 0,27; $p < 0{,}001$). These results provide full support for Hypothesis 1.

Further verification of the model showed that the Psychosocial safety climate is a significant positive predictor of organizational flexibility ($\beta = 0{,}09$; $se = 0{,}03$; $p = 0{,}001$), confirming Hypothesis 2b. The flexibility model exhibits high goodness-of-fit to the data ($R2 = 0{,}328$; $p < 0{,}001$). In the case of innovativeness ($R2 = 0{,}105$), a significant effect of the age-rank correlation was observed ($\beta = 0{,}05$; $p < 0{,}001$); however, the path leading directly from PSC to innovativeness did not reach the significance threshold in this variable configuration ($\beta = 0{,}03$; $p = 0{,}214$).

The analysis of financial performance revealed no direct relationship with the variables studied in the regression model ($R2 = 0{,}005$; $p = 0{,}838$). Using the bootstrapping inference method (5,000 resamples), indirect effects were estimated (Hayes, 2022). The index of moderated mediation for the serial path leading to financial performance proved to be non-significant (the BootLLCI and BootULCI confidence intervals included zero).

This implies that although justice and the safety climate are crucial for the internal efficiency and flexibility of a large organization, their translation into ultimate financial indicators is more complex and likely requires a longer time horizon than that captured in this cross-sectional study. A summary of the regression analysis results for Model 83 is presented in Table 1.

Table 1.
Regression analysis results for the specific dependent variables in the model.

Outcome (DV)	Predictor (IV)	Coeff (β)	SE	t	p	LLCI	ULCI
PSC (R2=0,287)	Constant	3,5776	0,0148	241,2374	0,0000	3,5484	3,6068
	ARC (X)	0,1404	0,0221	6,3464	0,0000	0,0969	0,1840
	JUSTICE (W)	0,1471	0,0370	3,9788	0,0001	0,0743	0,2198
	ARC × JUSTICE (Int_1)	0,2883	0,0554	5,2076	0,0000	0,1793	0,3972
FLEX (R2=0,327)	Constant	4,0508	0,0945	42,8443	0,0000	3,8647	4,2368
	ARC	0,0996	0,0109	9,1137	0,0000	0,0781	0,1211
	PSC	0,0864	0,0261	3,3035	0,0011	0,0349	0,1378
INNOV (R2=0,105)	Constant	4,3834	0,2207	19,8633	0,0000	3,9491	4,8177
	ARC	0,0458	0,0108	4,2513	0,0000	0,0246	0,0670
	PSC	0,0289	0,0232	1,2455	0,2139	-0,0168	0,0745
	FLEX	-0,0094	0,0505	-0,1855	0,8530	-0,1088	0,0901
FINANCE (R2=0,005)	Constant	6,7769	3,4080	1,9885	0,0477	0,0697	13,4840
	ARC	-0,0303	0,1122	-0,2704	0,7870	-0,2511	0,1904
	PSC	0,1912	0,2351	0,8131	0,4168	-0,2715	0,6539
	FLEX	-0,2276	0,5111	-0,4453	0,6564	-1,2334	0,7782
	INNOV	-0,4204	0,5877	-0,7154	0,4749	-1,5770	0,7362

(Note on abbreviations: PSC - psychosocial safety climate; JUSTICE - organizational justice; INNOV - organizational innovativeness; FLEX - organizational flexibility; ARC - age-rank correlation; FINANCE: organizational financial performance; LLCI / ULCI: lower/upper level of 95% confidence interval).

Source: Own elaboration based on empirical research results (N=300) using the PROCESS macro v5.0 (Hayes, 2022).

5. Summary

The table below (Table 2) presents a summary of all formulated hypotheses along with the decision regarding their acceptance or rejection based on the conducted statistical analyses (PROCESS Model 83).

Table 2.
Summary of research hypotheses verification results.

Hypothesis	Hypothesis content	Verification result	Statistical comment
H1	The relationship between the age-position correlation and the perceived psychosocial safety climate (PSC) in the organization is moderated by organizational justice	Supported	Significant interaction (β =0,29; p<0,001). The effect of ARC on PSC increases with higher justice.
H2a	The perceived psychosocial safety climate in the organization is positively correlated with organizational innovativeness.	Not supported	Lack of statistical significance in the model (β =0,03; p=0,214).
H2b	H2. The perceived psychosocial safety climate in the organization is positively correlated with organizational flexibility.	Supported	Significant positive impact (β =0,09; p=0,001).
H3a	Organizational innovativeness are positively related to the organization's financial performance.	Not supported	No significant relationship in the studied model (β =-0,42; p=0,475).
H3b	Organizational flexibility are positively related to the organization's financial performance.	Not supported	No significant relationship in the studied model (β =-0,23; p=0,656).
H4	The indirect relationship between the age-position correlation in the organization's hierarchy and the organization's financial performance, which is serially mediated by the perceived psychosocial safety climate (H4a1) and non-financial outcomes: innovativeness (H4b1) and organizational flexibility (H4c1), is moderated by organizational justice (H4a2).	Not supported	Indices of moderated mediation are non-significant (confidence intervals include zero).

Source: Own elaboration based on empirical research results (N = 300) using the PROCESS macro v5.0 (Hayes, 2022).

The most significant conclusion drawn from the analysis is the confirmation that an organization's demographic-hierarchical structure (age-rank correlation) does not influence the work climate in isolation. Its impact is inextricably linked to the perception of organizational justice.

The results demonstrate that in organizations characterized by a high level of justice, a traditional correlation between age and rank facilitates the building of a strong Psychosocial safety climate (PSC). This phenomenon can be explained through the lens of Career Timetable Theory (Lawrence, 1984), where the predictability of promotion paths aligned with age is recognized as a social norm. However, the key contribution of this work is demonstrating that procedural and distributive justice serve as a critical buffer. This allows employees to accept even non-traditional hierarchical arrangements (e.g., a younger supervisor), provided that the criteria for success are transparent and merit-based (Gilliland et al., 2000; Posthuma, Campion, 2009). This aligns with the framework of Social Exchange Theory (Blau, 2017), in which fair treatment constitutes the foundation of trust in management.

The study confirmed the role of PSC as a significant precursor of organizational flexibility. Consistent with the assumptions of Dollard and Bakker (2010), organizations that prioritize the mental health and psychosocial safety of their members create an environment conducive to adaptation. In such a climate, employees exhibit less resistance to change and a greater readiness to redefine their professional roles (Schaufeli et al., 2020). Interestingly, in the surveyed sample, this climate did not translate directly into innovativeness, suggesting that in large units, creative processes may be determined by other structural or technological factors (Jansen et al., 2006).

Despite confirming internal psychosocial dependencies, the model did not show a direct translation of these mechanisms into subjective financial performance within a short time horizon. The lack of significance for the full serial mediation path points to the existence of a so-called time-lag effect. Investments in safety climate and flexibility are long-term processes whose economic return may not be captured in cross-sectional studies (Hitt et al., 1997; Zahra et al., 2006).

6. Discussion

This study contributes to social exchange theory (Blau, 2017) and the Dynamic capabilities framework (Zahra et al., 2006) by identifying organizational justice as a key moderator. It demonstrates that justice enables the legitimation of non-traditional promotion paths, transforming them from potential sources of conflict into strategic resources that build a psychosocial safety climate (PSC) (Dollar, Bakker, 2010). By doing so, the research explains the psychological mechanism through which fairness perceptions allow employees to accept age-diverse hierarchical structures as a predictable social norm.

Despite a rigorous methodological procedure, this study has certain limitations. First, the cross-sectional research design precludes definitive conclusions regarding the directions of causality, which underscores the validity of conducting longitudinal studies in the future (Maxwell, Cole, 2007). Second, the focus on large enterprises limits the generalizability of the findings to the SME sector, which is characterized by flatter organizational structures (Jansen et al., 2006).

Future studies should use longitudinal designs to confirm cause-and-effect relationships and include objective financial data to verify managers' opinions (Sok et al., 2016). It is also recommended to compare different industries, such as IT and manufacturing, to see how professional norms influence the link between age structure and organizational performance (Jansen et al., 2006).

The results of this study provide significant guidance for HR managers, demonstrating that flexible age-structure management (e.g., promoting young talents) requires a solid foundation of organizational justice (Colquitt, 2001). Only transparent, meritocratic criteria allow age diversity to be transformed into a resource rather than a source of conflict. Investing in a psychosocial safety climate (PSC) emerges as an economically justified strategy that, by stimulating flexibility and innovativeness, builds a firm's long-term competitive advantage (Dollard et al., 2012).

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ATTITUDES TOWARD ARTIFICIAL INTELLIGENCE IN THE WORKPLACE – A COMPARISON OF GENERATION Z AND OLDER GENERATIONS

Anna WASILUK[1*], Anna TOMASZUK[2]

[1] Bialystok University of Technology, Faculty of Engineering Management; a.wasiluk@pb.edu.pl, ORCID: 0000-0002-5980-333X
[2] Bialystok University of Technology, Faculty of Engineering Management; a.tomaszuk@pb.edu.pl, ORCID: 0000-0002-2675-0323
* Correspondence author

Purpose: The aim of the article is to examine attitudes toward artificial intelligence (AI) in the workplace, with particular emphasis on representatives of Generation Z, and to compare their opinions with those of respondents from other generations.
Design/methodology/approach: A quantitative CAWI survey was conducted in the first quarter of 2025 using non-representative snowball sampling. The analysis included 535 respondents declaring Polish nationality, including 501 from Generation Z. Intergenerational differences were tested with the Mann-Whitney U test (H1-H3), and relationships between variables with Spearman's rank correlation (H4-H5).
Findings: The results indicate low use of AI at work and moderate verification of AI-generated information, with no significant generational differences. Older respondents reported slightly more frequent AI use and greater caution. In both groups, perceptions of AI's impact on the labour market were positively related to its perceived impact on one's own career. However, the relationship between perceived human replaceability by AI and its impact on career differed: it was very weak and positive in Generation Z but negative among older generations.
Research limitations/implications: Limitations include non-representative sampling, the dominance of Generation Z in the sample, and the self-reported nature of the data. Future research should use more balanced and representative samples, control for industry and job position, and consider qualitative or longitudinal approaches.
Practical implications: The results support organizational actions such as training in the critical evaluation of AI-generated content, clear rules for AI use at work, and tailored communication and development approaches for groups with different concerns and expectations.
Social implications: The uncertainty and neutrality of opinions highlight the need to strengthen AI competencies and critical thinking, and to promote responsible public narratives about the impact of automation on work and careers, particularly across generations.
Originality/value: The article offers a comparative quantitative perspective based on data from the Polish labour market, showing that generational differences in AI use may be weaker than commonly assumed, while differences in interpreting the career consequences of automation appear more pronounced.

Keywords: generative artificial intelligence, Generation Z, AI adoption in the workplace, impact of AI on career.
Category of the paper: research paper.

1. Introduction

The development of artificial intelligence (AI) is one of the key directions of contemporary technological transformation. From rule-based systems to generative models, AI is changing the functioning of organizations and the way work is performed, among others through automation, support for communication, and data analysis (Russell, Norvig, 2021; Tłuczek, 2023; Krup, 2023; Auffarth, 2024). Increasingly, its importance for the labour market and decision-making processes in organizations is also emphasized (Alto, 2024; Szpringer, 2024).

The growing use of AI tools raises questions about their impact on the work environment, required competencies, and employee attitudes. Particularly interesting in this context is Generation Z – the youngest generation currently active in the labour market, which grew up in conditions of widespread digitalization, influencing its competencies and expectations toward work (Pew Research Center, 2021; Pawłowska, 2022). The literature indicates that understanding this group as labour market participants is important also because they may co-shape organizational practices and directions of technological adaptation (Forum Odpowiedzialnego Biznesu, 2022; McKinsey & Company, 2022). At the same time, in order to capture the specificity of Generation Z attitudes, it is necessary to compare them with representatives of older generations whose professional experience and approach to innovation may differ.

The aim of this paper is to examine attitudes toward artificial intelligence in the workplace, with particular emphasis on representatives of Generation Z, and to compare them with the opinions of respondents from other generations. Achieving this objective makes it possible to better understand how the youngest generation of employees adapts to the changing technological environment and whether its approach differs significantly from that of older generations. Therefore, the following research hypotheses were formulated:

H1: Representatives of Generation Z use artificial intelligence tools in their professional work more frequently than representatives of older generations.

H2: Generation Z verifies information obtained from artificial intelligence to a lesser extent than older generations.

H3: Generation Z perceives the impact of artificial intelligence on their professional career more positively than individuals from other generations.

H4: There is a statistically significant correlation between the assessment of the possibility of replacing humans with artificial intelligence and the perceived impact of AI on professional careers in both analyzed groups.

H5: Among older generations, the relationship between the perceived capabilities of AI and its impact on career has the opposite direction compared to Generation Z.

2. Review of the literature

Artificial intelligence (AI) has been developing for decades; however, its importance for organizations and the labour market has increased particularly in recent years. The concept of AI is often associated with the approach proposed by J. McCarthy, while events such as Deep Blue's victory over G. Kasparov have become symbols of the growing capabilities of intelligent systems (McCarthy, 2006; Kaplan, 2025). The current wave of widespread adoption is particularly related to generative models based on the transformer architecture and conversational tools that have increased the accessibility of AI for users and organizations (Trypuz, 2024; Caelen, M.-A., Blete, 2024). These systems generate and process content in natural language, which allows them to support informational, communicative, and analytical tasks (Auffarth, 2024).

In the workplace, AI is used, among other things, to automate routine tasks, support decision-making processes and data analysis, as well as to improve task organization and monitor selected indicators (Crawford, 2024). At the same time, discussions continue regarding the consequences of this technology for competencies and employment. Attention is drawn to the need to develop digital skills, lifelong learning, and reskilling (Alto, 2024), as well as to the necessity of establishing legal and ethical frameworks for AI implementation, including transparency, traceability, and non-discrimination (Szpringer, 2024).

The analysis of attitudes toward AI may require a generational perspective, as generations differ in their technological experiences and learning styles. Generation Z (individuals born after 1995) is often described as a generation raised in a digital environment, capable of efficiently searching for information and oriented toward problem-solving (Grabiwoda, 2018; Ragin-Skorecka, Motała, Boguszewska, 2023). The literature also points to expectations related to flexibility and development, as well as lower loyalty toward employers (Muster, 2020). The importance of partnership relations and clear career development paths is emphasized (Rogozińska-Pawełczyk, Cewińska, Lubrańska, Oleksiak, Striker, 2019), along with preferences for remote or hybrid work (Lima-Vargas, A.E., Cervantes-Aldana, F.J., Lima-Vargas, S., 2022) and the need for a more individualized approach to this group (Silva Sousa, Colauto, 2021). The importance of Generation Z is also increasing in numerical terms; according to the Forum Odpowiedzialnego Biznesu (2022), their share in the global workforce

is expected to grow significantly, which strengthens the rationale for studying their attitudes toward AI in the workplace. Reports suggest that younger users are generally more open to AI tools and tend to use them more frequently (Pew Research Center, 2021; Deloitte, 2021), while at the same time expressing expectations regarding responsible implementation and transparency of such solutions (McKinsey & Company, 2022). This provides the background for verifying intergenerational differences in the frequency of AI use at work (H1) and in the assessment of AI's impact on career development, if the technology is perceived as a tool enhancing competencies and productivity (H3).

In addition to its benefits, the literature also highlights risks associated with the quality of AI-generated content, privacy, and transparency of decisions. J. Smith (2022) points to potential privacy violations, algorithmic discrimination, and lack of transparency, while Syrek-Kosowska and Żytkowiak-Wenzel (2025) emphasize the risk of superficial use of AI tools. In the context of work, this justifies the analysis of the tendency to critically verify information obtained from AI (H2). At the same time, the debate on automation and the "replaceability" of human labour by AI suggests a relationship between the perceived capabilities of AI and the assessment of its impact on career development (H4), while generational differences may lead to different interpretations of this relationship in Generation Z and in older generations (H5).

3. Research methods

The article presents selected results of a broader study concerning the perception and acceptance of artificial intelligence tools among young people. The study was conducted in the first quarter of 2025 using an online survey method (CAWI). The questionnaire was made available online (Google Drive), and the link was distributed via social media and further shared by respondents, which means that a non-representative sampling method based on snowball sampling was applied.

Only individuals declaring Polish nationality were included in the analysis. In total, 535 respondents were considered, including 501 representatives of Generation Z (born in 1995 or later) and 34 individuals from older generations. It should be emphasized, however, that the small number of respondents from older generations constitutes a limitation of the comparative analysis and requires caution when interpreting intergenerational differences. The sample was dominated by individuals with professional experience (406 respondents), and among Generation Z the proportion of employed individuals was higher than that of non-employed respondents. Similarly, in the group of older generations, the majority also declared having professional experience.

Statistical analyses were performed using the Statistica 13.1 software. For the variables compared between groups, basic descriptive statistics were calculated (mean, median, standard deviation). Hypotheses H1-H3 concerning intergenerational differences in the studied attitudes

were verified using the Mann-Whitney U test, and the practical significance of differences was also assessed using the effect size measure r. Relationships between variables for hypotheses H4-H5 were analysed using Spearman's rank correlation coefficient (r□). Correlations were calculated separately for Generation Z and for older generations, which made it possible to assess both the existence of relationships and their direction in both groups.

4. Analysis and discussion

Table 1 presents the frequency of the use of artificial intelligence tools in professional work among respondents with professional experience (n = 406).

Table 1.
Statistical measures concerning the frequency of the use of artificial intelligence tools in professional work and the analysis of differences between generations

Respondents	Basic statistical measures			Mann–Whitney U test		
	M	*Me*	*SD*	*p*	Z	r
Total	2.56	2.00	1.35	-	-	
Generation Z	2.55	2.00	1.36	0.44	0.787338	0.039
Other generations	2.72	3.00	1.21			

M – mean, *Me* – median, *SD* - standard deviation, *p* – level of statistical significance, Z – standardized test value, r – effect size. Differences are statistically significant for $p < 0.05$.

Source: own study.

Across the entire group, the mean value was 2.56, which indicates rather occasional use of AI at work. In the intergenerational comparison, the values were slightly higher among representatives of older generations (M = 2.72; Me = 3.00) than in Generation Z (M = 2.55; Me = 2.00); however, the difference was not statistically significant (p = 0.44). The negligible effect size (0.039) confirms that the differences have minimal practical significance; therefore, hypothesis H1 regarding significant intergenerational differences in the frequency of AI use at work was not confirmed.

The obtained results indicate a relatively low level of dissemination of AI tools in everyday professional practice, regardless of respondents' age. This may result from the early stage of AI implementation in many Polish organizations, unequal access to tools, as well as employees' competence and training limitations, and differences between industries in the pace of technology adoption. The slightly higher values observed in the group of older generations, although not statistically significant, may be associated with the more frequent performance of professional roles in which AI is already used (e.g., analytical, financial, and administrative areas), while some respondents from Generation Z work in sectors and forms of employment where the need to use AI is lower.

Table 2.
Statistical measures concerning the verification of information obtained from artificial intelligence and the analysis of differences between generations

Respondents	Basic statistical measures			Mann-Whitney U test		
	M	*Me*	*SD*	p	Z	r
Total	3.42	3.00	1.07	-	-	
Generation Z	3.42	3.00	1.06	0.54	0.637458	0.028
Other generations	3.53	4.00	1.16			

M – mean, *Me* – median, *SD* - standard deviation, *p* – level of statistical significance, Z – standardized test value, r – effect size. Differences are statistically significant for $p < 0.05$.

Source: own study.

Table 2 presents the declared frequency of verifying information obtained from AI tools. In the entire sample, the mean value was 3.42, which indicates a moderate level of verification depending on the situation. In the intergenerational comparison, the results were very similar. Generation Z reached M = 3.42, while older generations reached M = 3.53; however, the difference was not statistically significant (p = 0.54), and the effect size was negligible (0.028). This means that hypothesis H2 regarding significant intergenerational differences in the verification of information obtained from AI was not confirmed.

The moderate level of declared verification may result from the fact that the need to verify information depends on the type of task and the tool used, as well as from limited awareness of the risk of errors in AI-generated content or insufficiently developed habits of critically evaluating digital content. Slightly higher values among older generations may reflect greater caution, although in this study this difference has no statistical significance.

Table 3.
Respondents' attitudes toward the impact of artificial intelligence on the labour market and their own professional careers, and the interrelationship between these attitudes

Respondents	Attitude					Mo	f□
	1	2	3	4	5		
	percentage of indications						
	Toward the impact of artificial intelligence on the labour market						
Total	6.73	22.06	37.01	25.05	9.16	3	198
Generation Z	6.79	22.36	37.33	24.95	8.58	3	187
Other generations	5.88	17.65	32.35	26.47	17.65	3	11
	Toward the impact of artificial intelligence on one's own career						
Total	5.23	20.00	38.13	26,36	10,28	3	204
Generation Z	5.19	20.36	38.72	26,75	8,98	3	194
Other generations	5.88	14.71	29.41	20,59	29,41	3/5	10

Spearman's rank correlation coefficient	p	r□	t-statistic
Generation Z	p <0.05	0.363946	8.73
Other generations	p <0.05	0.633854	4.64

1 – definitely a threat, 2 – rather a threat, 3 – difficult to say (neither an opportunity nor a threat), 4 – rather an opportunity, 5 – definitely an opportunity. Differences are statistically significant for $p < 0.05$.
Mo – mode, f□ – frequency of the mode, p – level of statistical significance, r□ – correlation coefficient.

Source: own study.

Table 3 presents the distribution of respondents' attitudes toward the impact of AI on the labour market and on their own professional careers. In both questions, the most frequently selected answer was the neutral option "difficult to say" (Mo = 3), both in the assessment of the labour market (37.01%) and one's own career (38.13%), which indicates considerable uncertainty in evaluating the effects of AI. In Generation Z, the distribution of responses was similar to that of the entire sample, with a simultaneous predominance of assessments indicating "rather an opportunity" over "rather a threat" (labour market: 4-5 = 33.53%; career: 4-5 = 35.73%). In older generations, strongly positive responses regarding one's own career appeared more frequently (the answer "definitely an opportunity" – 29.41%), although the small size of this group should be taken into account.

To assess the relationship between the perception of AI at the labour market level and at the individual level, Spearman's rank correlation was calculated separately for both groups. The relationship was positive and statistically significant in Generation Z ($r_s = 0.364$; $p < 0.05$) and clearly stronger in older generations ($r_s = 0.634$; $p < 0.05$). This means that individuals who perceive AI as an opportunity for the labour market are also more likely to consider it an opportunity for their own careers, which confirms hypothesis H4. At the same time, the different strength of the relationship in the groups suggests a different pattern of intergenerational associations, which supports hypothesis H5. However, it should be emphasized that the number of respondents from older generations was small (n = 34), therefore the results for this group should be interpreted with caution.

A possible explanation for the dominance of neutral responses is the limited predictability of the effects of AI and the fact that some respondents do not have direct professional experience with AI tools, making it more difficult for them to translate the technological debate into concrete consequences for occupations and career paths. In addition, assessments may depend on the type of work and exposure to automation: individuals performing more IT-related, analytical, or administrative tasks are more likely to see practical applications of AI, which may lead to more definite evaluations. In contrast, younger respondents, especially at an earlier stage of their careers, may have less stable reference points regarding changes in the labour market and therefore more often choose an intermediate response. The stronger correlation observed in older generations may result from more established professional experience and a more coherent way of interpreting the impact of technology. If AI is perceived as an opportunity or a threat to the labour market, this perception is more often automatically transferred to the evaluation of one's own professional situation, whereas in Generation Z these assessments may be more separated and dependent on a specific context.

Table 4.
Statistical measures concerning the assessment of the possibility of replacing humans with artificial intelligence in professional tasks and the analysis of differences between generations

Respondents	Basic statistical measures			Mann-Whitney U test		
	M	*Me*	SD	p	Z	r
Total	3.50	4.00	0.95	-	-	
Generation Z	3.50	4.00	0.96	0.73	0.357642	0.016
Other generations	3.56	4.00	0.89			

M – mean, *Me* – median, *SD* - standard deviation, *p* – level of statistical significance, Z – standardized test value, r – effect size. Differences are statistically significant for $p < 0.05$.

Source: own study.

Table 4 presents the assessment of the possibility of replacing humans with AI in the performance of selected professional tasks. In the entire sample, the mean value was 3.50, which indicates that respondents tend to rate the potential of AI to take over certain duties relatively highly, particularly in routine tasks and those based on information processing. In the intergenerational comparison, the assessments were very similar (Generation Z – 3.50; other generations – 3.56) and did not differ statistically significantly ($p = 0.73$), while the effect size was negligible (0.016). Therefore, no significant intergenerational differences were confirmed in this respect.

Such a result may stem from the widespread awareness of AI applications in repetitive areas (e.g., data analysis, customer service, documentation), while at the same time recognizing the limitations of AI in tasks requiring creativity, empathy, and interpersonal competencies, which explains the absence of extremely high evaluations.

Table 5.
The relationship between the perceived impact of artificial intelligence on future career and the assessment of its applicability in professional tasks, along with the analysis of the strength and significance of this relationship (Spearman's rank correlation)

Spearman's rank correlation coefficient	p	r□	t-statistic
Generation Z	p <0.05	0.088051	1.22
Other generations	p <0.05	- 0.398313	-1.23

p – level of statistical significance, r□ – correlation coefficient. Differences are statistically significant for $p < 0.05$.

Source: own study.

Table 5 presents the relationship between the perceived impact of AI on one's future career and the assessment of its applicability in professional tasks. In Generation Z, the relationship was positive but very weak ($r□ = 0.088$; $p < 0.05$; $t = 1.22$), which indicates marginal practical significance and no clear translation of assessments of AI capabilities into predictions concerning one's own career. In older generations, a negative correlation of moderate strength was observed ($r□ = −0.398$; $p < 0.05$; $t = −1.23$), suggesting that a higher assessment of AI's potential to perform tasks may be associated with a more sceptical evaluation of its impact on one's own career. Such a pattern may result from differences in the stage and stability of career paths. Younger respondents more often treat AI as a "general" tool not yet linked to a specific

professional role, whereas some older individuals may more strongly associate automation with the risk of job changes, the need for reskilling, or a decline in job security.

The results of the study largely confirm findings from the literature but also reveal discrepancies regarding the practices and attitudes of Generation Z in the workplace. The low frequency of AI use at work suggests an early stage of adoption and uneven implementation in Polish organizations, which is consistent with observations about the experimental nature of implementation and the importance of institutional and sectoral conditions (Alto, 2024; Szpringer, 2024; Crawford, 2024).

The study did not identify statistically significant intergenerational differences in the use of AI tools at work, despite the literature describing Generation Z as "digital natives" who function more efficiently in the technological environment (Grabiwoda, 2018; Ragin-Skorecka et al., 2023). This result may be related to the fact that younger individuals more often work part-time or in positions where AI tools are not required, which limits their actual exposure to this technology.

The thesis that Generation Z is more open to innovation finds partial confirmation in more positive assessments of AI as an opportunity, especially in the context of career development. This is consistent with the conclusions of reports and observations indicating an ambivalent yet moderately optimistic attitude among young users (Deloitte, 2021; McKinsey & Company, 2022; Smith, 2022). At the same time, the study did not confirm that Generation Z verifies AI-generated information more frequently; the level of verification was moderate and showed no significant intergenerational differences, which weakens assumptions about the higher "digital vigilance" of this group despite the risks highlighted in the literature and the need for critical evaluation of content (Smith, 2022; Syrek-Kosowska, Żytkowiak-Wenzel, 2025).

Finally, assessments of the impact of AI on the labour market and on one's own career were consistent: positive correlations indicate that the perception of effects at the macro level translates into individual expectations (McKinsey & Company, 2022). Additionally, the negative relationship between the assessment of the possibility of replacing humans with AI and the evaluation of its impact on career (in older generations) may reflect concerns related to displacement in the labour market (Szpringer, 2024).

5. Conclusion

The aim of the study was to examine attitudes toward artificial intelligence in the workplace, with particular emphasis on Generation Z, and to compare them with the opinions of representatives of other generations. The results made it possible to verify the hypotheses and formulate conclusions regarding the perception and use of AI at work.

Hypothesis H1 was not confirmed. Generation Z did not use AI at work more frequently than older generations, and the differences were not statistically significant; slightly higher values observed among older groups may be associated with more frequent employment in areas where AI has already been implemented. Hypothesis H2 was also not confirmed. The level of verification of information obtained from AI was moderate and similar in both groups, suggesting that age does not significantly differentiate the level of critical reflection toward AI-generated content. Hypothesis H3 was likewise not confirmed. Despite a slight predominance of positive assessments in Generation Z, the neutral response dominated in both groups and the differences were not statistically significant.

Hypothesis H4 was confirmed. In both groups, a statistically significant relationship was observed between the assessment of AI capabilities in professional tasks and the perceived impact of AI on career, although the strength and direction of this relationship differed. Hypothesis H5 was also confirmed. In Generation Z the relationship was very weak and positive, whereas in older generations it was moderate and negative, which may indicate that older respondents more often associate the growing capabilities of AI with concerns about the consequences for their own professional position.

The obtained results show that the attitudes of Generation Z toward AI are complex and cannot be reduced to a simple pattern of "greater openness = more frequent use and greater optimism." It is therefore justified to further examine the role of factors such as professional experience, sector of employment, or the nature of performed tasks. In addition, quantitative analyses could be complemented with qualitative research that would better capture motivations, concerns, and ways of integrating AI into professional practice.

The study has several limitations. The sample was non-representative (non-random recruitment, CAWI), which limits the possibility of generalizing the results to the population of working individuals in Poland. Additionally, the group of older generations was small ($n = 34$), therefore intergenerational comparisons should be interpreted with considerable caution. Future research should involve more balanced sample structures, enabling a more comprehensive analysis of differences between generations. It would also be advisable to conduct similar studies on representative samples with a more balanced participation of age groups and with control of factors such as industry and level of education.

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HUMAN RESOURCE MANAGEMENT AND ORGANIZATIONAL TRUST IN THE IT INDUSTRY – QUALITATIVE RESEARCH RESULTS

Elżbieta WIŚNIEWSKA

Faculty of Engineering Management, Bialystok University of Technology; elzbieta.wisniewska@sd.pb.edu.pl, ORCID: 0009-0005-1899-6875

Purpose: The aim of this article is to propose a model of the relationship between human resource management, trust and employee's lack of intention to leave?
Design/methodology/approach: Nine interviews were conducted with IT employees in various positions at various companies. A conceptual model was developed to illustrate the relationship between human resources management and trust. The standards that should characterize HRM practices necessary for the emergence of trust in the workplace were also identified.
Findings: HRM practices and trust interact. In the IT industry, fairness, transparency, communication, employee development, work-life balance, and employee well-being are particularly important in this process. Organizational trust influences employee intentions to leave, which is particularly important in this industry, where employee turnover is high.
Research limitations/implications: The IT industry is unique due to its deeply ingrained teamwork and the nature of this work. The direct impact of human resources management on organizational trust and, indirectly, on employee turnover may therefore differ across industries.
Originality/value: This article focuses on organizations with a flat project structure in the IT industry. Current research indicates a poor understanding of the shared role of HRM and trust in this industry, and their connection to employee turnover intention. It seems important to deepen our understanding of this topic. The key originality of this work lies in its proposed model.
Keywords: HRM, trust, turnover intentions.
Category of the paper: Research paper.

1. Introduction

Nowadays, companies have a huge demand for the software they need to achieve their goals. This has led to a significant increase in the number of software development companies, which in turn has intensified competition for highly qualified IT specialists (Costa et al., 2024).

One of the most serious challenges facing companies in the IT services industry is employee turnover (Joseph et al., 2007). Due to the high demand for skilled IT workers, they can easily find new jobs. Furthermore, employers are grappling with a dwindling talent pool and growing business needs. To replace an IT employee, an organization must spend one to seven times their annual salary (Kochanski, 2001). Employee turnover has a number of consequences, not only financial, related to recruitment and training. It also includes unsatisfactory work quality among new employees and damage to the company's reputation. Employee attrition can result in the loss of individuals with valuable professional experience and their tacit knowledge of internal systems (McKnight et al., 2008). Key employee departures can also disrupt project execution, leading to delays or even failure to complete the project (Tahir, Ashraf, 2024).

One factor influencing employee intentions to leave is organizational trust (Zhao et al., 2022). Trust is an important element of an organization's social capital (Bugdol, 2010), as it is crucial for the long-term stability of the organization and the well-being of its employees (Pearce, Conger, 2003). Based on previous research, trust influences, among other things, employee attitudes, work engagement, and intention to leave (Donovan et al., 1998). The process of building trust is gradual and can become very dynamic, requiring appropriate skills from those responsible for creating an atmosphere of trust (Mayer et al., 1995).

2. Literature review

2.1. Human resources management

Research demonstrates that human resource management (HRM) contributes to the generation of desired organizational outcomes (Huselid, 1995). Bratton and Gold (2017) argue that HRM involves a strategic approach to employee management. Researchers define it as managing employment, relationships, and HR practices, all with the goal of achieving a competitive advantage for the company. Traditional HRM is the process of managing people in organizations, including various techniques for managing people and ensuring their relevance, qualifications, and alignment with stakeholder expectations. Activities related to professional qualifications, learning, and training are important (Liboni et al., 2019). HRM also encompasses defining the organizational structure, improving communication between employees, and developing ethical and social principles (Silva et al., 2022).

New paradigms in HR have significant implications for training in competencies required by Workforce 4.0 (a concept describing the new role of employees in the era of the Fourth Industrial Revolution) and new job profiles (Ana et al., 2019). The new talents of the future will require the development of more strategic, coordinated, and creative activities (Fareri et al., 2020; Flores et al., 2020). Tasks that would traditionally be performed manually and require

individual analysis can be automated, and large amounts of data can be analyzed quickly, intelligently, and precisely (Silva et al., 2022). The emergence of artificial intelligence has simplified and shortened many processes in organizations, but it has also led to job anxiety among many employees. HR departments must develop strategies to counter job anxiety and offer programs to develop technological competencies (Bonin et al., 2025).

2.2. Trust and human resources management

Trust is crucial in the organization-employee relationship because its presence or absence influences HRM outcomes. According to social exchange theory, HRM practices are perceived by employees as signals of the organization's intentions; when perceived positively, they foster trust (Jaškevičiūtė, 2021).

Building trust leads to many positive behaviors among employees. They are more engaged (Lewicka, Szeliga, 2016), proactive, communicate better, and achieve better results, making the organization more competitive (Krot, Lewicka, 2016). Organizational trust also influences employee intention to leave (Haridas et al., 2021). Human resource management practices can build or undermine employee trust in the organization, their supervisors, and their colleagues. This is achieved through fair compensation and evaluation, including transparent criteria for promotion and compensation, equal treatment of all employees, and the absence of favoritism (Colquitt et al., 2001). Transparent communication is also important (Kocot, Kwasek, 2023). An organization should clearly define and communicate its goals to employees and provide relevant information. Another aspect worth addressing is employee development. The organization should train them, help them plan their career paths, and invest in their competencies (Cascio, 2003). This will not only increase their effectiveness but also ensure that employees feel cared about. HR department practices should not forget the importance of participation in company decisions (Yukl, 2012). Employees want to be consulted about changes and highly value work autonomy (Schwabe, 2023). Researchers also emphasize the importance of work-life balance and employee well-being. Employee well-being should be understood as a positive mental state resulting from professional experiences and functioning in the work environment (Warr, 2007). Practices that support these phenomena are important for employees and strengthen organizational trust (Rousseau et al., 1998).

High levels of trust in the organization, supervisors, and HR systems significantly reduce employee turnover intentions (Dirks et al., 2002), while violations of trust increase turnover intentions (Robinson, 1996).

It is worth noting that the relationship between human resource management and trust is a dynamic process in which both constructs reinforce each other (Rousseau et al., 1998). HRM practices build trust, and trust increases the effectiveness of HRM tasks (Dirks et al., 2002).

3. Research methodology

The IT industry is one of the most dynamically developing industries in Poland and abroad, requiring specific initiatives and relationships within organizations. Demand for qualified IT employees is high, and consequently, they are eager to seek new employment when dissatisfied with their current position.

The purpose of this article is to propose a model for the relationship between human resources management, trust, and employee reluctance to leave. To achieve this goal, qualitative research was used, as it involves interpreting phenomena in their natural context and allows for the analysis of the meanings assigned by the respondents, using methods such as interviews, observations, and text analysis (Denzin et al., 2011).

3.1. Data collection

Items embedded in the document, such as charts, figures and pictures, should be centered. Individual in-depth interviews are a source of empirical data. The research sample was purposive (Michalak, Stanisławski, 2025). Each person invited to participate in the study represents the private sector in the Polish IT industry. Interviews were conducted with nine individuals (four women and five men) in various positions, such as programmers, analysts, team leaders, and software testers, with experience ranging from 3 to 16 years. Each interviewee represented the private sector. The cities where the companies employing the interviewees are located are Białystok, Gdańsk, Katowice, Łódź, and Warsaw. In qualitative research, it is important to select participants in a way that allows for the diversity of the interviewees' experiences. This allows for rich and multidimensional data (Patton, 2015). At the time the study began, the researcher did not know the sample size or composition. Subsequent interviews were conducted until code saturation was reached (Creswell, J.W., Creswell, J.D., 2018).

Because the individuals surveyed work in various cities across Poland, interviews were conducted online using the MS Teams application. The interviews took place in December 2024. Each interview lasted between 50 and 90 minutes. The table below lists all interviews.

Table 1.
List of individual interviews conducted

Lp.	Interview code	Specialization	Years of work experience	City
1	A1	Business analyst	3	Łódź
2	A2	Business analyst	5	Gdańsk
3	P1	Developer	6	Warszawa
4	P2	Developer	8	Białystok
5	P3	Developer	16	Warszawa
6	T1	Software tester	5	Białystok
7	T2	Software tester		Gdańsk
8	TL1	Team leader	9	Katowice
9	TL2	Team leader	12	Warszawa

Source: own study.

During the conversation, various topics were discussed, which were divided into several categories: they concerned the following categories: (1) the specificity of the IT industry, (2) HRM standards applied in the organization, (3) conditions necessary to build trust, (4) benefits of building organizational trust, (5) employee intentions to leave.

3.2. Data analysis and interpretation

Interviews were recorded with the interviewees' consent, and after data collection, they were transcribed. Data analysis involved data reduction, generation, and verification. Data reduction involved transcribing interviews and developing interview documents. Data generation involved creating output codes regarding the specifics of the IT industry, trust, and shared leadership. Data verification is based on their comparison with the literature (Glinka, Czakon, 2021).

A literature review preceded the development of a code list. Five broad groups of deductive codes were created: (1) specifics of the IT industry, (2) HRM standards used in the organization, (3) conditions necessary for building trust, (4) benefits of building organizational trust, and (5) employee intentions to leave (Miles et al., 2014). This was followed by coding.

The next step was abduction, which involved analyzing, interpreting, and comparing the coded data with existing literature. Deductive and inductive analysis were combined, as deductive codes were verified through reading and content analysis of the interviews (Magnani, 2001). The developed codes were then organized into coherent themes (Saldana, 2021).

The identified HR constructs included fairness, transparency, employee development, work-life balance, and employee well-being, as well as elements related to trust (trust in the organization, trust in superiors), and employee intention to leave. Based on the information obtained, a diagram was created showing the "mechanism" of the relationship between HR standards, trust, and employee intention to leave.

4. Study results

4.2. Human resources management

Human resources management is a set of interconnected practices (recruitment, development, motivation, and evaluation) that form a single, coherent system, designed to strengthen employee engagement and lead to greater effectiveness. Certain phenomena derived from HRM build organizational trust. One such aspect is fairness, which can relate to potential opportunities received by employees or financial matters. It applies to the organization as a whole, but also to specific individuals.

There are situations where I feel unfairly treated, like I mentioned about being assigned to Polish projects when I could have been assigned to foreign ones. I'd like to be assigned to foreign projects, but I don't get that chance, so it's quite unfair to me. (T1)

But apart from that, I don't get these raises, I don't get these raises, even though I work on the project that brings in the most money for the company. This makes me feel quite unfairly treated. (T1)

I think fairness is an important element I pay attention to, and it doesn't matter whether we're talking about the entire company or specific individuals. (P3)

Transparency is also crucial for IT workers. Employees expect clear, truthful communication. This includes financial matters, job requirements, and even potential dismissal. Transparency strengthens a sense of fairness and reduces information asymmetry.

I mentioned transparency. For me to trust my superiors, they'd have to play fair with me. I mean, if it's an official email saying my project is earning a lot of money for the company, it's the biggest project in the company, why do I then hear there's no money for a raise? These are contradictory messages. I think the message should be clear, or at least a small amount of the raise, whatever, not a blatant, no-money approach. When the official email went out, and we know from the documentation how much a given project is earning. (T1)

Yes, this kind of transparency [impacts trust] exactly like that. So I don't suddenly wake up and get an email saying I have to change jobs in a month. So I don't know. Some quarterly or annual reports, let's say, on whether the company is actually profitable would definitely be great. (P1)

Well, as I mentioned earlier, communication with my superior is difficult at my current company. I can't say I trust him. Because I never know what to expect from him. Cannot determine requirements. (TL1)

Employees count on honest and prompt **communication**, regardless of whether the content is positive or negative. It can even be a dominant feature in building organizational trust. Employees expect secure communication and want to be able to share their views without fear of unpleasant consequences. This is crucial given work in project teams and high time pressure. Furthermore, it affects the credibility of the other party.

I also trust people who are willing to talk and accept feedback, both positive and negative. (A1)

I think that this communication skill [influences trust the most]. That would be the dominant feature. Without it, it's impossible to work in an industry as specific as IT. (A2)

I trust, if only because of the flexibility of communication. That is, the feeling of not being deceived, the ability to communicate what one thinks without consequences, and then, as it were, accept it. I think that's what trust is for me, that I can say what I think, knowing that it will lead to discussion and not negative consequences. (TL2)

Another important aspect is employee **development**. The pace of technological change in this environment is very rapid, so employees must constantly train. It's important that they have access not only to the necessary training but also to help them define their development path. In addition to hard skills, soft skills are also important.

My supervisor recently set some career goals for me. And the company also offers access to training. These are training courses that develop both soft and more technical skills. I've noticed this, and I also rate them as quite good. (A2)

It's very important, becoming more important every year, because technology is currently developing so rapidly, so employee development, both technological and personal—I would say, when it comes to soft skills—is very, very important. (T1)

Employees increasingly care about whether someone cares about them, so a sense of **well-being** is important to them. They expect attention from their managers and the organization.

They are aware that their well-being also affects their work. Furthermore, they care about **work-life balance**, a phenomenon particularly prominent among Generations Z and Y, who make up a large group of IT employees. They want to maintain a balance between their work and personal lives, which is possible thanks to the specific nature of work in the IT industry, such as flexible hours and remote work.

And the third thing that builds trust is when I see that someone genuinely cares about the team… they ask how we're feeling, what we're doing, and if they can help. Managers/supervisors should provide this service to their subordinates, helping them solve problems in a variety of ways. This is to help us work more effectively and to ensure we enjoy working together. (A1)

When it comes to caring for the employer's image, I definitely rate the organization's practices highly, and when it comes to caring for employees, their well-being, and engagement, I rate them significantly low. Those are two categories. (A1)

I'm at a stage where family and work-life balance are most important to me now. (P3)

Based on the responses, it can be concluded that the constructs mentioned above influence the development of two types of trust: **trust in the organization** and **trust in the manager**. Employees feel secure and don't worry about their financial situation. They know they can count on their manager, who will always be there to help them if needed.

Yes, I trust my company, that's for sure. What does that mean to me? I have a sense of financial stability, or is it just that... I don't feel like I'm working in a sinking ship, let's say; the company is thriving and stable. (P1)

...I can definitely say that I trust my company. It gives me a sense of stability, of employment, and I know that they haven't simply abandoned me in the lurch, that a project is cut short and I'm fired. I don't have to worry about my future right now, or about financial stability. (P2)

I trust [my manager]. For me, that means I can come to him with any problem at work, and if he doesn't know how to help, he'll point me to someone I can talk to to find a solution. (P1)

I trust [my supervisor] because I can go to him with any issue, with any piece of code, if necessary. I work with this person, and this person is also technical, and I think I can just go to him with any issue and find support from him. (P2)

Employees with high levels of trust are less likely to leave their jobs because trust builds employee loyalty. **Turnover intentions** are less likely in those with high levels of trust due to a sense of loyalty.

Trust builds employee loyalty… (A1)

Yes, yes, the greater my trust in the company, the less I would want to leave. (A2)

But I'm someone who couldn't work in such an environment [of lack of trust] long-term. I would simply withdraw from that environment, fire me. And that's exactly what I did. In my previous job. I simply fired me and said I wasn't renewing my contract. (P1)

Unfortunately, that was the reason I left [lack of fairness and communication], because plain words don't solve certain things. Or they don't move us forward with our work. So there, the level of trust ranged from quite high to very low. (P2)

There's a clear interdependence between HRM practices and trust; there's a **feedback loop** between these constructs. What builds trust influences HRM goals, such as employee performance and engagement. Employees are more effective, loyal, and more willing to sacrifice.

...builds its effectiveness... I believe trust is a very important factor, firstly, for work to be performed as efficiently as possible, and secondly, as I mentioned, for employee loyalty. (TL1)

Certainly, greater commitment (leads to trust), a greater willingness to sacrifice, such as, say, needing to get something done on a given day, means I'm also willing to work an extra hour to get something done, because I know that if I need help, someone will surely come to my aid. (P1)

4.3. The importance of organizational trust and intentions to leave

The study confirmed the relationship between HRM, trust, and employee turnover intentions and allowed us to identify constructs of particular importance to IT employees, as well as the types of trust that influence turnover intentions among IT employees. The proposed conceptual model based on the study results is presented in Figure 1.

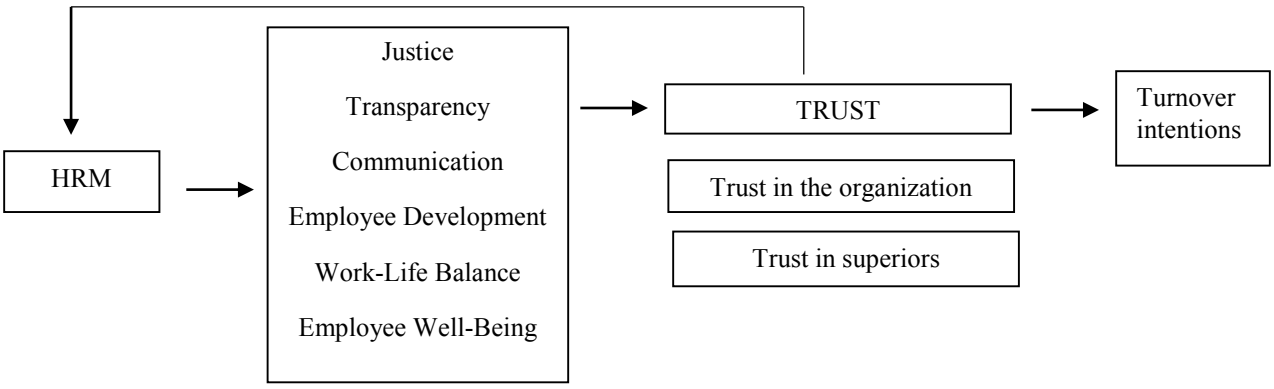

Figure 1. Human Resource Management and Trust - A Proposed Conceptual Model.
Source: own study.

The HR phenomena identified in the study are also factors that build trust. The surveyed professionals identified fairness, transparency, communication, employee development, work-life balance, and employee well-being as key factors. These same factors build trust in the organization and in their managers, which in turn influences their intention to leave the workplace. There's also a noticeable feedback loop between HR practices and trust. Through HR, various types of trust can be built, and the resulting trust, in turn, strengthens HR practices.

5. Summary

Due to intense competition for talent, the IT industry is grappling with employee turnover. Human resources practices play a key role in shaping organizational trust, which influences employee attitudes and behaviors, including their intentions to leave their jobs. HR policy elements such as organizational fairness, transparency of organizational operations, open and reliable communication, professional development opportunities, support for work-life balance, and attention to employee well-being are particularly important. There is a noticeable "mechanism" where HRM practices build trust, and trust reinforces HRM practices. In the work environment typical of the IT industry, where employees are highly qualified and have ample employment opportunities, these practices increase the perceived credibility of the organization, employee loyalty, effectiveness, and engagement. The IT industry is unique due to the deeply rooted nature of teamwork. The direct impact of human resources management on organizational trust and, indirectly, on employee turnover intentions may therefore differ from industry to industry. Further research directions may include examining the relationship between employee intention to leave and other cause-and-effect relationships.

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EMPLOYEE WELL-BEING AND THE ROLE OF SUPERVISOR SUPPORT, AFFECTIVE ORGANIZATIONAL COMMITMENT AND JOB INSECURITY

Paweł WÓJCIK

University of Warsaw, Faculty of Management; p.wojcik21@uw.edu.pl, ORCID: 0000-0003-1560-263X

Purpose: To answer the question of whether, under conditions of generalized job insecurity that remains partly beyond the employer's control, it is possible to support employees' eudaimonic well-being related to environmental mastery. To this end, a path analysis model was tested in which perceived job insecurity, supervisor support, and affective organizational commitment were analyzed as contextual factors associated with eudaimonic well-being, with career satisfaction serving as a mediator. The structure of these relationships was also compared across generations: Baby Boomers (BB) and Generations X, Y, and Z.
Design/methodology/approach: Thanks to funding from the IDUB program of the University of Warsaw a survey study was conducted using the CAWI method (computer-assisted web interviewing) on the Ariadna online panel in December 2022, on a random sample of N = 1,069 individuals aged 18-75 years, representative of Poland in terms of age, gender, and place of residence. For the analyses, a subsample of participants employed under an employment contract was extracted (N = 545).
Findings: A comparison of the path analysis models reveals intergenerational differences in the mechanisms underlying these relationships. The results of the analyses showed fairly strong associations between career satisfaction and eudaimonic well-being in the BB and Z generations, between supervisor support and career satisfaction in all generations except BB, and between affective organizational commitment and career satisfaction in Gen X and Y.
Research limitations/implications: Self-report measurement instruments were used, and the study was conducted within a specific cultural and institutional context, which limits the generalizability of the findings. Future research could incorporate psychological determinants as well as data from multiple sources (including qualitative data) and be conducted in other countries or sectors of the economy.
Practical implications: Within the framework of sustainable HR, personalized solutions and competency development are recommended, as well as avoiding generalized management methods. Such an approach reduces the social costs of adapting to job insecurity.
Social implications: Guidelines for mitigating the social consequences of low eudaimonic well-being under conditions of widespread job insecurity and for enhancing employees' adaptability.
Originality/value: A rare operationalization of eudaimonic well-being, contrary to the prevailing hedonic approach to date. The use of path analysis models, which make it possible to simultaneously assess associations among several variables, rather than limiting the analysis to isolated mean differences.

Keywords: eudaimonic well-being, job insecurity, affective organizational commitment, career satisfaction, generations.
Category of the paper: Research paper.

1. Introduction

Under conditions of increasing volatility in the economic environment, within the developing stream of sustainable HRM, practices aimed at protecting and strengthening employees' psychological well-being are being implemented (Juchnowicz et al., 2023). From the perspective of the Job Demands-Resources model (Bakker et al., 2007), these actions prevent the loss of key competencies and contribute to reducing turnover and improving job quality, and thus to increasing long-term effectiveness, including financial effectiveness (Peiró et al., 2019), as well as organizational innovativeness (Hobfoll, 2001). They also constitute a source of competitive advantage (Gallup, 2022), supporting the Employee Value Proposition and employer branding, particularly under conditions of the war for talent (Harter et al., 2003; Pawłowska, 2022). Therefore, identifying the determinants of employee well-being supports the selection of adequate managerial solutions. Contemporary organizations operate under conditions of globalization, digitalization, demographic change, and intensified competitive pressure. For this reason, job insecurity as a factor reducing well-being (De Witte, 2005; Sverke et al., 2002) has become a permanent element of organizational functioning, regardless of individual human resource management strategies. Jobs may be eliminated due to external causes, in particular as a result of technological changes or shifts in demand. This is reflected in the systematic shortening of organizational life cycles, not only in the SME sector. The average lifespan of a corporation listed in the S&P 500 index fell from approximately 60 years in the mid-twentieth century to less than 20 years in 2016; over a decade, as many as half of companies may fail (Anthony et al., 2018).

Thus, the question arises regarding the scope of employers' actual influence on employees' psychological well-being under conditions of generalized uncertainty that organizations do not fully control (Koźmiński, 2014). Answering it requires an approach different from the one adopted so far, focused on hedonic well-being (Warr, 2007). This approach does not provide sufficient recommendations for organizations on how to effectively counteract the negative effects of transactional rules (Pawłowska, 2023).

According to Conservation of Resources Theory, job insecurity constitutes a significant threat of losing key individual resources, such as a sense of control over the future or the possibility of long-term career planning, which deteriorates employees' well-being (Hobfoll, 2001). For this reason, the present article proposes the hitherto rarely applied concept of eudaimonic well-being, and in particular one of its key dimensions-environmental mastery (Ryff, 1989, 2014). It refers to a sense of agency and the capacity to actively shape one's life

and work situation. Such a perspective relates to the concept of career satisfaction, which is linked not only to objective indicators of career success but also to the possibility of planning professional development and perceived employment stability (Ng et al., 2005). Under conditions of heightened uncertainty, the ability to plan one's career may become substantially constrained and reduce satisfaction (De Cuyper et al., 2012). Hence, career satisfaction was introduced as a mediating variable in the relationship between job insecurity and eudaimonic well-being. According to previous research, the situation described reduces affective attachment, that is, an employee's emotional bond with the organization (De Witte, 2005; Sverke et al., 2002). This is a consequence of a disrupted exchange between the employee and the organization, resulting from the limitation of long-term commitment (Cheng et al., 2008). For this reason, affective organizational attachment is another variable included in the present study.

This leads to a further question about the mechanisms through which employers can influence eudaimonic well-being under these conditions. According to Social Exchange Theory, leadership quality, including supervisor support, serves as a key "carrier" of employee well-being, particularly under conditions of heightened job insecurity (Eisenberger et al., 2002), which was considered in the present study.

At the same time, researchers point to generational differences (BB, X, Y, Z) in responses to the variables mentioned above. To date, however, these have most often been identified through comparisons of mean values of isolated constructs, which does not allow for a full capture of the underlying mechanisms of relationships or for formulating reliable recommendations (Rudolph et al., 2018). In response to this research gap, an intergenerational comparison of a path analysis model describing the relationships among variables was conducted while maintaining conditions of measurement comparability (Vandenberg, Lance, 2000).

In summary, the aim of the present research is to test a path analysis model in which perceived job insecurity, supervisor support, and affective organizational attachment are analysed as contextual factors associated with employees' eudaimonic well-being, with career satisfaction serving a mediating role. In addition, the mechanisms underlying these relationships were compared across the BB, X, Y, and Z generations. The proposed approach constitutes an empirical contribution to human capital management theory and to the development of so-called sustainability HRM practices.

2. Eudaimonic Well-Being in the Context of Job Insecurity

In pursuing the stated objective, employees' eudaimonic well-being was operationalized according to Ryff (1989, 2014), with a focus on the environmental mastery dimension as measured in the Polish adaptation (Karaś, Cieciuch, 2017). This dimension refers to a sense of agency and competence, as well as an individual's capacity to actively shape the work environment, cope with complex demands, and capitalize on emerging developmental opportunities. For this reason, it is methodologically more appropriate than the previously dominant hedonic approach.

Job insecurity was operationalized as a unidimensional construct, expressed as a general, subjective perception of the threat of job loss. The distinction between quantitative and qualitative job insecurity (Greenhalgh et al., 1984) was deliberately abandoned, as it is more strongly tied to a specific job position (Hellgren et al., 2002; Cheng et al., 2008). The evidence indicates moderate to strong negative associations between job insecurity and employee well-being, operationalized almost exclusively in hedonic terms (Sverke et al., 2002; De Witte et al., 2016).

3. The Role of Supervisor Support and Affective Organizational Attachment and the Mediating Role of Career Satisfaction

The eudaimonic approach to well-being directs attention to career satisfaction, defined as a subjective, cognitive evaluation of one's career to date and the degree to which it aligns with personal goals, aspirations, and individual standards of success. This evaluation is holistic in nature and pertains to long-term career development rather than to current experiences related to one's present job (Hofmans et al., 2008). It is a dynamic construct shaped by individual evaluative criteria, which may change over time and differentiate individuals.

Research indicates that perceived job insecurity hinders long-term career planning, lowers the subjective evaluation of one's career trajectory, and fosters a short-term orientation in employment decisions (De Cuyper et al., 2012). At the same time, this area remains relatively underexplored in the context of eudaimonic well-being. Consequently, in line with Conservation of Resources Theory, career satisfaction may be interpreted as an individual, personalized resource of the employee, the loss or threat of which leads to a decline in psychological well-being (Hobfoll, 1989, 2001).

In the context of human resource management, it is also important to consider the employee-organization relationship, referring to organizational attachment. In line with the concept proposed by Meyer and Allen (1991), and for the purposes of achieving the stated objectives,

the focus was placed on affective organizational attachment, understood as an employee's identification with the organization. This choice is consistent with the issues under analysis, as it is associated with individual satisfaction derived from the fulfillment of expectations and the attainment of personal career goals within the organization (Meyer, Allen, 1991; Bańka et al., 2002). These variables are negatively associated with job insecurity, which is interpreted as employees' response to a disrupted exchange in the employee-organization relationship (Sverke et al., 2002; Cheng et al., 2008). Thus, the question arises whether organizations can mitigate these negative consequences by restoring balance in the exchange relationship-among other means, through supervisor support, which, in accordance with the concept of Meyer and Allen (1991), fosters the growth of affective organizational attachment (see Pawłowska, 2022).

In the present study, the operationalization of supervisor support was adopted in accordance with the approach of the British government institution Health and Safety Executive (HSE), according to which support denotes the availability of assistance necessary for the effective performance of professional duties. It includes, among other elements, the provision of feedback, emotional support, and the communication of clear guidance regarding tasks.

In summary, the presented research analyses the relationships between perceived job insecurity, supervisor support, and affective organizational attachment, and employees' eudaimonic well-being, with career satisfaction serving a mediating role (Fig. 1).

4. Formulation of Hypotheses from a Generational Perspective and the Theoretical Path Analysis Model

In this section, a theoretical path analysis model was formulated along with detailed research hypotheses. Within the body of scholarly work on well-being, integrated path models, which account for the simultaneous effects of multiple variables and mediating mechanisms, are relatively rarely tested. The applied approach therefore constitutes a methodological contribution to the discipline.

H1. There is a positive relationship between supervisor support and career satisfaction.

H2. There is a positive relationship between affective organizational attachment and career satisfaction.

H3. There is a negative relationship between perceived job insecurity and career satisfaction.

H4. There is a positive relationship between career satisfaction and employees' eudaimonic well-being.

Relatively few studies compare the structure of the relationships described above across employee generations (Baby Boomers, X, Y, and Z). There are indications that analyses conducted on aggregated samples do not provide sufficient knowledge about the underlying

mechanisms of these relationships (Vandenberg et al., 2000). The consequences of job insecurity for employee well-being may differ across generations (Sverke et al., 2002; De Witte et al., 2016). At the same time, eudaimonic well-being is rarely operationalized as a central construct in generational analyses.

Research by Ng et al. (2005) indicates that objective indicators of career success, such as remuneration, explain only part of the variance in career satisfaction, whereas a key role is played by a sense of meaning, autonomy, and career coherence, which relates to the concept of eudaimonic well-being. Comparative studies further suggest that younger employee cohorts more frequently report uncertainty regarding their career future and a lower assessment of its stability, which reduces career satisfaction under conditions of an unstable labor market (Hirschi et al., 2019). At the same time, younger generations more often emphasize development and work-life balance criteria, whereas older generations emphasize stability and achievement (Rudolph et al., 2018).

There is no unequivocal evidence that generations exhibit higher or lower levels of organizational attachment (Cropanzano et al., 2005). Its level may vary depending on labor market experiences, and in particular on the level of supervisor support, which is relatively less frequently analyzed as a differentiating variable than job satisfaction. Research indicates that employees from Generations Y and Z respond more strongly to the quality of the relationship with their supervisor and the level of support received, whereas representatives of Generations BB and X more often base their attachment on norms of loyalty and employment stability (Rudolph et al., 2020). Therefore, Hypothesis 5 was formulated.

H5. There are differences between employee generations in the structure of the path analysis model describing the relationships among supervisor support, affective organizational attachment, job insecurity, and eudaimonic well-being, with career satisfaction serving a mediating role.

Such an approach makes it possible to move beyond the dominant comparisons of mean values and introduces into HRM an analysis of the mechanisms operating within specific employee cohorts, thereby addressing existing empirical gaps.

5. Methodology

5.1. Procedure of the Study

The study was funded by a microgrant awarded in 2022 under the Excellence Initiative - Research University (IDUB) program at the University of Warsaw. The project was conducted in substantive and methodological collaboration with dr hab. A. Pawłowska, professor of education.

The dataset was obtained through survey research conducted by the external research agency ARIADNA using the CAWI method in December 2022. The study included a random sample of N = 1,069, representative of the Polish population aged 18-75 in terms of age, gender, and place of residence. For the purposes of the analyses, a sample of respondents employed under an employment contract (N = 545) was selected.

The following generational ranges were adopted: Baby Boomers (1946-1964), X (1965-1980), Millennials Y (1981-1995), and Z (1996-2012).

5.2. Diagnostic Instruments

In the study, a questionnaire comprising four diagnostic instruments was used, each demonstrating an acceptable level of reliability as indicated by Cronbach's alpha coefficient. Respondents provided answers on a 5-point Likert scale.

Eudaimonic well-being was assessed using the Environmental Mastery scale from C.D. Ryff's Questionnaire (Karaś, Cieciuch, 2017), consisting of 5 items. A sample item is: "I am quite good at managing the many responsibilities of my daily life." (Cronbach's alpha = 0.75).

Career satisfaction was measured with a 3-item scale (Hofmans, Dries, Pepermans, 2008), (Cronbach's alpha = 0.80).

Affective organizational attachment was assessed using 6 items from the Organizational Commitment Scale by Meyer and Allen (1991), as cited in Bańka et al. (2002), (Cronbach's alpha = 0.88).

Supervisor support was measured using a scale from the Management Standards Indicator Tool developed by the British agency Health and Safety Executive (HSE, 2007). Five items were used (Cronbach's alpha = 0.85). All instruments achieved reliability coefficients above the recommended threshold of 0.70, which constitutes a criterion for conducting path analysis (Konarski, 2009).

Job insecurity was measured using a single item applied in studies focused on the perceived general sense of insecurity (De Witte, 2005; Sverke et al., 2002).

Descriptive statistics for all scales and for the job insecurity item are presented in Table 1.

Table 1.
Descriptive Statistics for the Scales Used in the Study

	N	Mean	Std. Dev.
Supervisor Support	545	3,21	0,89
Affective Organizational Attachment	545	3,13	0,81
Job Insecurity	545	2,76	1,03
Career Satisfaction	545	3,24	0,76
Eudaimonic Well-Being	545	3,51	0,66

Source: author's own data analyses.

6. Research Results

The formulated research hypotheses were verified using the path analysis method available in the statistical package Statistica ver. 14.

Figure 1 presents the path analysis model, the structure of which reflects the direction of the research hypotheses. The model refers to the studied population of individuals employed under an employment contract aged 18-75 years (N = 545).

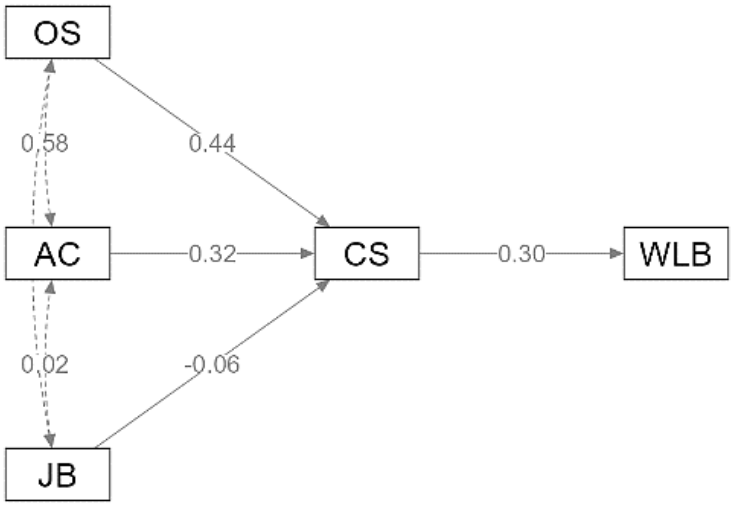

Figure 1. Path Analysis Model for the Total Research Sample.

Source: author's own data analyses.

The designations adopted in the path analysis model are as follows: OS - supervisor support; AC - affective organizational attachment; JB - fear of job loss; CS - career satisfaction; WLB - employee eudaimonic well-being.

The path analysis model was estimated using the maximum likelihood method. Table 2 presents selected model fit indices whose values are not sensitive to large sample sizes. These indices suggest that the tested path analysis model provides a reasonably good representation of the relationships among the analyzed variables (Sagan, 2018).

Table 2.
Model Fit Indices

Indices	Value
Joreskog GFI	0,95
Joreskog AGFI	0,81
Bentler-Bonett Normed Fit Index	0,90
James-Mulaik-Brett Parsimonious Fit Index	0,37
Bollen's Delta	0,91

Source: author's own data analyses.

Table 3 presents the standard errors and levels of statistical significance of the path coefficients in the model. Only the coefficients for paths corresponding to the hypothesized causal relationships among the variables were included.

Table 3.
Path Coefficients of the Model for the Total Sample (N = 545)

Estimates	Parameter	SE	T	p=
[OS]-->[CS]	0,44	0,03	12,16	0,00
[AC]-->[CS]	0,32	0,03	8,59	0,00
[JB]-->[CS]	-0,06	0,03	-1,28	0,14
[CS]-->[WLB]	0,30	0,03	7,74	0,00

Source: author's own data analyses.

The interpretation of the path parameters in the overall model indicates positive and statistically significant relationships between supervisor support (OS) and affective organizational attachment (AC), and career satisfaction (CS), as well as between career satisfaction and employee eudaimonic well-being (WLB). Therefore, there are no grounds to reject Hypotheses 1, 2, and 4. The relationship between fear of job loss (JB) and employee eudaimonic well-being (WLB) proved to be statistically non-significant, contrary to Hypothesis 3.

The hypothesis concerning intergenerational differences in the relationships among the model variables was also tested. Tables 4-7 present the results of model verification for the four employee generations: BB, X, Y, and Z.

Table 4.
Path Coefficients of the Model for the BB Generation (N = 67)

Estimates	Parameter	SE	T	p=
[OS]-1->[CS]	0,19	0,13	1,51	0,13
[AC]-2->[CS]	0,25	0,12	2,09	0,03
[JB]-3->[CS]	-0,29	0,10	-2,72	0,00
[CS]-4->[WLB]	0,49	0,09	5,26	0,00

Source: author's own data analyses.

Table 5.
Path Coefficients of the Model for the Gen X (N = 197)

Estimates	Parameter	SE	T	p=
[OS]-5->[CS]	0,44	0,06	7,19	0,00
[AC]-6->[CS]	0,33	0,06	5,25	0,00
[JB]-7->[CS]	-0,01	0,05	-0,30	0,76
[CS]-8->[WLB]	0,20	0,06	2,99	0,00

Source: author's own elaboration.

Table 6.
Path Coefficients of the Model for the Gen Y (N = 231)

Estimates	Parameter	SE	T	p=
[OS]-9->[CS]	0,49	0,05	9,81	0,00
[AC]-10->[CS]	0,32	0,05	6,05	0,00
[JB]-11->[CS]	-0,11	0,04	-2,66	0,00
[CS]-12->[WLB]	0,32	0,05	5,53	0,00

Source: author's own data analyses.

Table 7.
Path Coefficients of the Model for the Gen Z (N = 50)

Estimates	Parameter	SE	T	p=
[OS]-13->[CS]	0,61	0,10	6,02	0,00
[AC]-14->[CS]	0,19	0,11	1,61	0,10
[JB]-15->[CS]	0,18	0,10	1,78	0,07
[CS]-16->[WLB]	0,39	0,12	3,27	0,00

Source: author's own data analyses.

A comparison of the path parameters in Tables 4-7 shows that the strongest positive and statistically significant relationship between supervisor support (OS) and career satisfaction (CS) occurs in Generation Z (0.613) and Generation Y (0.496). The relationship between affective organizational attachment (AC) and career satisfaction (CS) is strongest in Generation X (0.334) and Generation Y (0.323). The relationship between career satisfaction (CS) and employee eudaimonic well-being (WLB) is strongest in the BB generation (0.492) and Generation Z (0.395). The data confirm Hypothesis 5 regarding the existence of generational differences.

7. Summary

A path analysis model was tested in which the relationships among perceived job insecurity, supervisor support, and affective organizational attachment, and employees' eudaimonic well-being were examined, with career satisfaction serving a mediating role. Generational comparisons of the path analysis model were also conducted.

The results of the analyses showed relatively strong relationships between career satisfaction and eudaimonic well-being in Generations BB and Z, between supervisor support and career satisfaction in all generations except BB, and between affective organizational attachment and career satisfaction in Generations X and Y. Referring to the considerations presented in the introduction, Generations X and Y do not respond with decreased well-being in situations of job insecurity. Identifying differences in the mechanisms of these relationships was possible due to the comparison of path analysis models, rather than relying on the dominant approach in research of analysing mean values.

8. Limitations of Inference, Directions for Future Research, and Practical Implications

The limitations of inference stem from the use of self-report measures and from situating the study within a specific cultural and institutional context, which restricts the generalizability of the findings. In addition, path analysis was used to test the hypotheses, which is effective as a method for verifying directional hypotheses, but is controversial as a method for testing cause-and-effect relationships on cross-sectional data. Future research should incorporate psychological determinants and data from multiple sources (e.g., organizational data), include other countries and sectors, and test both direct and indirect effects of the variables. Generational differences should be verified longitudinally and with the use of qualitative methods.

Demonstrating the importance of supervisor support constitutes a significant training recommendation for leaders in the field of sustainable human resource management (sustainable HRM). This result challenges the belief that formal solutions alone reduce the sense of job insecurity, for example, holding an employment contract, as was the case for the respondents. Personalized managerial actions are therefore recommended, as they may limit the costs of inadequate interventions and strengthen competitiveness based on human capital.

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SENSE OF HUMOUR AND PSYCHOLOGICAL RESILIENCE OF CONTEMPORARY EMPLOYEES

Anna WZIĄTEK-STAŚKO[1*], Katarzyna GRACJASZ[2]

[1] Jagiellonian University in Krakow, Faculty of Management and Social Communication, Institute of Economics, Finance and Management; anna.wziatek-stasko@uj.edu.pl, ORCID: 0000-0001-6873-7488
[2] VIZJA University, Warsaw; k.a.gracjasz@gmail.com, ORCID: 0009-0002-7599-687X
* Correspondence author

Purpose: The article presents the topic of the role of humour in the process of creating psychological resilience of people employed in contemporary organizations. The aim of the publication is to show the internal potential of humour in the context of strengthening the psychological resilience of employees.
Design/methodology/approach: The article is based on empirical research conducted among a sample of 400 professionally active individuals. The study employed the Multidimensional Sense of Humour Scale (MSHS) and the Resilience Measurement Scale (SPP-25). Statistical analyses were used to examine relationships between the dimensions of humour and psychological resilience.
Findings: A significant positive correlation was found between the analysed constructs – although the distribution of the strength of the relationship was not uniform and differed depending on the combination of the analysed subscales. The findings show humour as a complex psychological resource that acts as a buffer reducing tension, facilitating the reinterpretation of stressful situations and supporting adaptation to emotional and cognitive demands.
Research limitations/implications: The limitations of the research process include its cross-sectional design and the use of self-report diagnostic instruments.
Practical implications: The article offers insights that may be applied in organizational practice, especially in initiatives aimed at strengthening employee resilience and well-being by integrating humour into approaches that support coping and adaptation.
Originality/value: The article brings a new perspective to research on resilience by integrating humour with reflection on the ability of individuals to cope in dynamic and turbulent times. It highlights the importance of humour as an internal resource contributing to psychological resilience and indicates directions for further research.
Keywords: sense of humour, psychological resilience, employee well-being, human resource management.
Category of the paper: Research paper.

1. Introduction

The contemporary organizational reality is characterized by unpredictable dynamics of processes affecting the way economic entities function (Brewer et al., 2021), which also directly affect people (cf. Balak, 2025). In the face of the increasing phenomena that destabilize everyday professional life, concern for the psychological well-being of employees is therefore growing (Kelloway et al., 2023).

Given the unpredictability of the environment, there is an increasing need for competences that enable rapid recovery of psychological harmony after crises (Caniëls, Curseu, 2024), which in turn supports the continuity of an economic entity's operations during periods of strong perturbations (Biedenbach et al., 2022). Consequently, employees' psychological resilience should be regarded as a foundation of organizational durability (Aguiar-Quintana et al., 2021).

In the search for ways to maintain employees' psychological peace, increasing attention is being paid to factors that are not only instrumental in nature, but that affect well-being in an indirect way. Humour in the workplace it can act as a shock absorber of emotional tensions (León-Pérez et al., 2021) – especially when it is positive (Basler et al., 2025), supporting a more flexible approach and thereby enhancing psychological resilience (Bhattacharyya et al., 2019).

This article attempts to conceptualize psychological resilience in the professional context, taking into account the role of humour in the organizational environment and placing them in the current socio-economic conditions. The main goal of the publication is to identify the connections between the affective personality disposition, which is the tendency to humour, and the adaptive mechanisms supporting individuals in situations of pressure.

2. Literature review

2.1. Multi-faceted form of humour

The presence of humour is manifested in everyday social exchange, where it can regulate emotions (Kyomugisha, 2025), relieve tensions, and positively influence the quality of interpersonal communication (Beck, 1997, cit. per El-Sayed et al., 2024). Fundamentally, humour enhances positive mood (Szabo, 2003, cited in Martin, Ford, 2018) and facilitates psychological distancing from suffering as well as the reinterpretation of complex experiences, thereby enabling individuals to find lightness even in the face of overwhelming experiences (Nemkova, Ivanova, 2025).

Humour effectively complements the model of operation of economic entities, thus supporting key processes (Yang, Yang, 2023). In the relational model, Cooper (2008, cit. per Rosenberg et al., 2024) describes humour by referring to events intentionally aimed at amusing

another person in a professional context. In turn, Romero and Cruthirds (2006, cit. per Andrade et al., 2017) claim that humour in the workplace includes various messages that employees find funny and that evoke positive emotions. A shared sense of humour builds group solidarity and deepens the bonds between its members (Martin, 2024). Moreover, employees who use humour while fulfilling their professional duties are clearly more relaxed, which ultimately translates into their productivity (Tarvin, 2014).

2.2. Psychological resilience

Resilience is most often considered a relatively durable dispositional trait – a personal resource that enables an accurate response to crisis situations [*resiliency*, psychological resiliency] – or an adaptive process that supports overcoming negative experiences [*resilience*, psychological resilience] (Brewer et al., 2019). From a functional perspective, it is sometimes seen as a primary human response to destabilizing events (Wulandari et al., 2025) or as a protective form that facilitates effective adaptation to difficult conditions (Luthar et al., 2000, cit. per Du et al., 2021).

Resilience allows employees for responding adequately to everyday disruptions (Franken et al., 2019) and "bouncing back" from adversities (Kotzé, Nel, 2013, cit. per Meintjes, Hofmeyr, 2018). Increased levels of psychological resilience are associated with employee engagement (Aggarwal, 2022), which comes to the fore in situations of increased stress (Wiroko, Sugiharti, 2022). Resilient employees have a positive attitude (Chikobvu, Harunavamwe, 2022) and perform better on tasks (Baluszek et al., 2023). Accordingly, resilience becomes one of the foundations of an individual's long-term success in turbulent professional realities (cf. Ibrahim, Hussein, 2024).

2.3. Humour and psychological resilience

A sense of humour is increasingly mentioned among the characteristics of psychologically resilient people (Block, Block, 1980, cit. per Ogińska-Bulik, Juczyński, 2008). People who can respond to disruptions with a joke are less likely to experience anxiety (Gholami et al., 2025), regain a sense of control more effectively (Kaya, Yağan, 2022), and show greater perseverance and readiness to act in unfavourable circumstances (Mahat-Shamir, Kagan, 2022). In addition, humour not only supports psychological resilience (Rapp, Wuttig, 2024), but also contributes to its increase (Gholami et al., 2025). It is assumed that humour promotes concentration on positive aspects of events, which facilitates transformation of negative episodes into constructive narratives (Kaya, Yağan, 2022). Finally, humour is called an immune process that is responsible for regulation of emotions and effectiveness of action in situations of pressure (Reizer et al., 2022).

In light of the above findings, the following research hypothesis is proposed:

H1. ***There is a statistically significant positive correlation between sense of humour and psychological resilience.***

3. Methodology

The study had a cross-sectional and correlational design and was conducted in 2024 using the CAWI method on a sample of 400 professionally active individuals (52% women, 48% men) aged 20-65. The questionnaire was distributed online, which should be considered when interpreting the results. Participation in the study was voluntary and anonymous, and all respondents were previously informed about the purpose, scope, and principles of the project.

Standardized psychometric instruments were used: the Multidimensional Sense of Humour Scale by Thorson and Powell in the Polish adaptation by Klinowska (MSHS; $\alpha = 0.81$) and the Resilience Measurement Scale developed by Ogińska-Bulik and Juczyński (SPP-25; $\alpha = 0.89$).

All analysed variables and their subscales are listed in Table 1.

Table 1.
Operationalization of the studied variables

Variables	Subscales
1. Sense of humour: IV	MSHS.1 Creating and using humour in a social context MSHS.2 Using humour as a coping strategy MSHS.3 Appreciating humour and humourists MSHS.4 Negative attitudes towards humour and humourists
2. Psychological resilience: DV	SPP.1 Perseverance and determination in action SPP.2 Openness to new experiences and a sense of humour SPP.3 Personal competences for coping with and tolerating negative emotions SPP.4 Tolerance of failures and treating life as a challenge SPP.5 An optimistic attitude to life and the ability to mobilize in difficult situations

Description: IV – independent variable; DV – dependent variable.

Source: own study.

To empirically resolve the previously specified assumption, a number of statistical techniques were used, and detailed results are presented in the next chapter.

4. Research results

4.1. Descriptive statistics of the studied variables

The assessment of the data distribution was carried out using the Kolmogorov-Smirnov test, assuming a significance level of $p < 0.05$. Values in the range of $0.05 < p < 0.1$ were interpreted as significant at the level of statistical tendency. The statistical characteristics of the humour measurement are presented in Table 2.

Table 2.
Statistical description of the results of the sense of humour measurement (N = 400)

Sense of humour scales	Descriptive statistics				Distribution		K-S test		AC
	Min	*Max*	*M*	*SD*	*S*	*K*	*K-S*	*p*	
MSHS.1	11.00	55.00	37.31	10.21	-0.43	-0.13	.060	.002	0.935
MSHS.2	8.00	31.00	21.27	4.61	-0.56	-0.20	.104	.001	0.578
MSHS.3	2.00	10.00	8.35	1.75	-1.24	1.42	.187	.001	0.680
MSHS.4	4.00	19.00	7.69	3.35	0.83	1.42	.135	.001	0.745
MSHS	34.00	116.0	83.23	16.23	-0.46	0.04	.066	.001	0.912

Description: M – mean, SD – standard deviation, S – skewness, K – kurtosis, K-S – Kolmogorov-Smirnov test, p – significance level; AC – Cronbach's alpha coefficient.

Source: own study.

All assessed subscales and the total score of the MSHS showed distributions that did not meet the assumptions of normality. Therefore, nonparametric techniques were used for further analyses. The values of Cronbach's alpha coefficient for most subscales confirm their high reliability, especially in the context of using humour for social purposes (MSHS.1; AC = 0.935) and the total scale score (AC = 0.912). It should be mentioned, however, that the subscale of the MSHS.2, concerning the use of humour as a coping strategy, the reliability of which (AC = 0.578) does not reach the recommended threshold of 0.70. This may reveal limited internal consistency of this component, which should be taken into account when interpreting the data. In turn, the negative skewness in the distribution of MSHS.3 scores (appreciation of humour and humourists) signals a predominance of higher scores, although the reliability of this subscale (AC = 0.680) also slightly deviates from the recommended value. The lower means obtained within MSHS.4 may indicate a low level of negative attitudes towards humour in the studied population.

The statistical description of psychological resilience is presented in Table 3.

Table 3.
Statistical description of the results of the psychological resilience measurement (N = 400)

Resilience scales	Descriptive statistics				Distribution		K-S test		AC
	Min	*Max*	*M*	*SD*	*S*	*K*	*K-S*	*p*	
SPP-25.1	6.00	25.00	19.31	4.09	-0.53	-0.09	.087	.001	0.818
SPP-25.2	6.00	25.00	19.89	3.71	-0.77	0.31	.127	.001	0.742
SPP-25.3	6.00	25.00	18.81	4.08	-0.54	-0.09	.118	.001	0.805
SPP-25.4	6.00	25.00	19.21	3.77	-0.52	-0.09	.095	.001	0.758
SPP-25.5	5.00	25.00	17.39	4.00	-0.36	-0.07	.082	.001	0.728
SPP-25	31.00	125.0	94.62	17.11	-0.51	0.11	.064	.001	0.937

Description: M – mean, SD – standard deviation, S – skewness, K – Kurtosis, K-S – Kolmogorov-Smirnov test, p – significance level; AC – Cronbach's alpha coefficient.

Source: own study.

Similarly to the measurement of sense of humour, all subscales of the SPP-25 and the value did not fit into the normal model, which justified the implementation of nonparametric methods. Cronbach's alpha coefficients for individual subscales indicate satisfactory internal consistency (from 0.728 to 0.818), and for the entire scale very high reliability (AC = 0.937). The negative

skewness of the distributions suggests a tendency to give higher ratings in the analysed dimensions of psychological resilience. The average indicators for each of the components were relatively high, which confirms the generally high level of resilience among the respondents.

4.2. Relationships between sense of humour and psychological resilience

In the next stage, the relationships between sense of humour and psychological resilience were analysed. The hypothesis H1 was verified using Spearman's rank correlation (rho), and the results are presented in Table 4.

Table 4.
Spearman rank correlation results for the components of sense of humour and psychological resilience

	MSHS.1	**MSHS.2**	**MSHS.3**	**MSHS.4**	**MSHS**
SPP-25.1	.142**	-0,03	.192**	-.273**	.132**
SPP-25.2	.522**	.422**	.426**	-.387**	.567**
SPP-25.3	.381**	.272**	.253**	-.270**	.392**
SPP-25.4	.362**	.232**	.278**	-.307**	.376**
SPP-25.5	.366**	.294**	.262**	-.243**	.386**
SPP-25	.397**	.261**	.320**	-.343**	.415**

Description: correlation coefficients significant at * $p < 0.05$; ** $p < 0.01$.

Source: own study.

The collected information confirms a number of statistically significant patterns between the dimensions of the sense of humour and the components of psychological resilience. Most of the coefficients had positive values and were significant at the level of $p < 0.01$. The clearest correlations were observed between the creation and social use of humour (MSHS.1) and openness to new experiences (SPP-25.2), $r = 0.522$, and between the general result of the sense of humour and the same resilience subscale, $r = 0.567$. Moderately strong positive correlations were also found between the general MSHS and personal competences and tolerance of emotions (SPP-25.3) and optimism (SPP-25.5). The only lack of significance was noted in the case of the relationship between MSHS.2 (using humour as a strategy) and perseverance (SPP-25.1), where the coefficient was $r = -0.03$. In turn, the subscale related to negative attitude towards humour (MSHS.4) showed significant negative associations with all aspects of psychological resilience, with the strongest one concerning the readiness to explore the unknown ($r = -0.387$).

The obtained overall correlation coefficient between the general level of sense of humour and psychological resilience ($r = 0.415$) confirms the existence of a moderate, positive relationship between these constructs.

4.3. Discussion

The conducted analyses confirmed hypothesis H1, proving the existence of a moderate correlation (r = 0.415), statistically significant, between the level of sense of humour and psychological resilience. This result suggests that humour can strengthen the resources of an individual in the face of complex experiences.

The revealed regularities are consistent with previous empirical findings indicating the importance of humour in reducing the negative effects of stress (Kyomugisha, 2025). The repeatability of the effect in different contexts allows us to perceive it as an adaptive mechanism.

The particularly strong correlation between the use of jokes in interpersonal contacts (MSHS.1) and openness to new experiences (SPP-25.2) may indicate that the tendency to joke is associated with cognitive flexibility and readiness to explore, which is consistent with the adaptive approach to humour.

In turn, a positive attitude towards comic content, measured using a scale based on reversed questions (MSHS.4), co-occurred with a higher level of almost all analysed aspects of resilience. This pattern reinforces the perception of humour as a source of psychological well-being.

For a more complete image, it should be noted that the relationship between using humour as a coping method (MSHS.2) and persistence in action (SPP-25.1) did not reach significance. This suggests that the importance of humour does not extend evenly to all dimensions of psychological resilience. While humour promotes emotion regulation and distancing from factors that disrupt internal balance, its influence on consistent goal pursuit seems limited or requires a more nuanced research approach. This conclusion indicates the need for further analyses – taking into account humour styles and external circumstances.

The collected empirical data confirm that a sense of humour can support an individual's psychological resilience and constitute a valuable resource in adaptation processes. These conclusions open up space for formulating specific practical implications, which will be discussed in the following chapter.

5. Recommendations

The analyses conducted provide valuable guidelines for the practice of human capital management. Humour, the impact of which is shaped by the way it is used and the individual sensitivity of the recipients, can be an important tool supporting psychological well-being and adaptability of people functioning in organisations.

One of the areas where the research results are directly applicable refers to building a work culture that supports flexible response to stress and environmental variability. Introducing touches of playfulness into everyday interpersonal exchanges – e.g. through team initiatives, internal campaigns or informal rituals – can provide a sense of security, facilitate integration and support recovery after psychologically stressful experiences.

In the professional context, it is particularly important to consciously shape forms of expression. Promoting humorous styles based on kindness, while limiting the manifestations of aggressive or exclusive irony, can influence the psychological atmosphere in the team, improve relationships and prevent conflicts. Therefore, it would be reasonable for superiors to undergo training in recognizing the potential and risks associated with jokes in organizational communication.

Including humour in workshops on soft skills, psychological resilience, and stress management can be a valuable addition to standard development programs. Treating humour as a competency that can be developed can contribute to increased individual effectiveness and greater team cohesion in the face of challenges resulting from the roles and responsibilities they perform.

Despite the valuable conclusions drawn from the conducted analyses, the study is burdened with several limitations that should be taken into account when interpreting research observations and formulating further directions of exploration.

Firstly, the use of a cross-sectional design limits the possibility of drawing causal conclusions. The collected data allow us for capturing only a static image of the relationships between variables, without the possibility of tracking their dynamics over time. For this reason, it is recommended to implement longitudinal studies that will allow us for tracking changes in psychological resilience and tendency to humour – for example, in response to specific stressful events, organizational changes or periods of increased workload.

Secondly, all analyses were based on self-report materials, which carries the risk of cognitive distortions, including the social desirability effect. The subjectivity of responses may lead to over- or underestimation of assessments, especially in the areas of self-reflection and emotional control. In the future, a good direction would be to enrich the research project with a qualitative component (e.g. interviews), observational or behavioural elements, which will allow for capturing the actual patterns of using humour in the professional space.

Expanding the exploration of the issues raised will enable a better understanding of the psychological mechanisms supporting humans in their daily performance of duties in formal structures. In particular, the following is recommended:

- in-depth analysis of situational humour in various organizational contexts – e.g. in medical, educational and technological teams,
- research on potential relationships between humour style and employee burnout, engagement and team effectiveness,

- testing the effectiveness of interventions aimed at developing humour with a view to strengthening resilience – e.g. in the form of training, interpersonal training or psychological health prevention programs.

This approach can support not only the well-being of individuals but also should increase readiness of teams to respond quickly and resilience of entire economic institutions to systemic disruptions.

6. Conclusions

The conducted research confirmed a significant correlation between a sense of humour and psychological resilience, indicating humour as an intrapersonal resource supporting professional functioning. The results revealed variability in the strength and structure of this relationship, highlighting the complexity of adaptive mechanisms relevant to human capital management.

The analysis provided both theoretical and practical grounds for further exploration of the role of humour in supporting employees' psychological well-being and justifies the implementation of strategies aimed at mitigating emotional strain and enhancing effective responses to contemporary organizational challenges.

In this context, the well-known saying *"Laughter is the best medicine"* gains a scientifically grounded dimension.

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THE ACADEMIC OMBUDSMAN: CHAMPIONING WELL-BEING

Agnieszka ZATYKA-SZLACHCIC[1*], Ewa BECK-KRALA[2]

[1] AGH University of Krakow; azsz@agh.edu.pl, ORCID: 0009-0006-2276-2585
[2] AGH University of Krakow; ebeck@agh.edu.pl, ORCID: 0000-0003-0264-5825
* Correspondence author

Purpose: Highlighting the role and importance of the academic ombudsman in creating the well-being of the academic community at Polish public universities.
Methodology: Analysis of existing data – legal regulations concerning the positions established to support and protect academic values and principles. Analysis based on information available on websites and in the Public Information Bulletins (BIP) of 21 member universities of the Conference of Rectors of Polish Universities (KRUP).
Findings: The results of the research allows identifying the role of academic ombudsman in the context of building universities free from undesirable behaviour. They let to outline practical recommendations for shaping this role as support of well-being at Polish universities too.
Research limitations: The research allows for general recommendations for Polish universities. It does not take into account the specific characteristics of individual institutions resulting from their educational profiles.
Practical implications: An analysis of the existing roles of academic ombudsmen may assist in developing a concept for this role at universities that will be required to establish it.
Social implications: The opportunity to contribute to the well-being of the academic community in Polish higher education institutions.
Originality: This issue is rarely the subject of research in the Polish context.
Keywords: academic ombudsman, well-being, university, academic community.
Category of the paper: Research paper.

1. Introduction

For years, the academic community has been experiencing an increasing workload and mounting pressure in the workplace (Du Plessis, Martin, 2019; McAlpine, Akerlind, 2010; Salimzadeh, Hall, Saroyan, 2021; Winefield, Jarrett, 2001). A heavy workload in research and teaching (Ross, Scanes, Locke, 2023), increasing bureaucracy, the weakening of social ties within the academic environment (Salimzadeh et al., 2021), and the emergence of undesirable behaviours (Täuber et al., 2022) are some of the factors contributing to the deterioration in the

well-being of university staff in recent years. Within universities there is observe a structural conflict between the two largest groups of staff: academic teachers and academic administration. It poses a significant challenge to day-to-day collaboration and affects the recipients of educational offer. The reduced level of well-being among university staff translates into a deterioration in staff–student relations, which significantly impacts students' well-being.

In light of the growing challenges facing public universities, the work of the academic ombudsman represents an important initiative in supporting the academic community. Hence, the aim of this article is to highlight the role and significance of the academic ombudsman in fostering the well-being of the academic community at Polish public universities. It is presented in the context of grassroots university initiatives and the systemic legislative changes planned by the Ministry of Science and Higher Education (MNiSW). Based on the research of the Academic Network for Safety and Equality (ASBiR) Research Section, a framework for defining the role of the academic ombudsman in public universities in Poland has been proposed. The research findings may serve as a guide and inspiration for university management in process of establishing and designing this role.

The research methodology determined the structure of the article. The first, theoretical section, is based on a critical review of the relevant literature. Identifies the challenges faced by the academic community, which result in a decline in the well-being of its members. The second, research-based part highlights the role of the academic ombudsman as one of the factors supporting the academic community in fostering its well-being.

2. Challenges Facing The Academic Community

Changes in the external environment of higher education institutions expose the academic community to constant pressure and an accumulation of stressors. They results, amongst other things, from frequent legislative changes, working with Generation Z, a teaching workload, reduced funding, remuneration policy, material condition of working environment, limited research opportunities, and the weakening of social bonds (Ross et al., 2023; Salimzadeh et al., 2021; Chan et al., 2020; Lee et al., 2021). The modern university is characterize by the dominance of corporate mechanisms, such as ubiquitous evaluations, competition driven by funding, and bureaucratization (Elznerowicz, Pajor, 2025). External pressure also manifests itself in the demand for high efficiency, the fulfilment of rigorous publication requirements, and the constant adaptation of programs to the needs of the labor market (Ross et al., 2023).

All above results in an overload of research, teaching, organizational and administrative work that far exceeds paid working hours (Winefield et al., 2008). A shift in the nature of this workload is also observe. Whereas in previous years increased workload occurred periodically

during the most demanding periods of the semester, now it is a permanent state (Morrish et al., 2019; Salimzadeh et al., 2021). This weakens social bonds and support (Marioni et al., 2020), and, combined with the low social status of the profession, exacerbates staff's negative feelings.

A significant source of stress arising from within the organization is the difference in values and beliefs between staff and those in leadership roles within the university (Bone, Ross, 2021). These tensions relate to power and authority, and their roots are in the organizational culture and structure of the university (Bone, Ross, 2021). They may manifest as undesirable behaviours such as: bullying, discrimination or the devaluation of employees' achievements (Täuber et al., 2022). All of them have a devastating impact on employees' professional careers, mental health and general well-being (Faria, Mixon Jr, Salter, 2012). The Polish universities' environment is characterize by the presence of mechanisms that encourage abuse and normalize psychological violence as a management style (Safe University, 2025). Research confirms these phenomena, pointing to such forms of bullying, harassment and microaggression as: ridicule and humiliation within the academic community, being ignored during work meetings, intimidation and blackmail, unlawfully claiming authorship of publications, undermining trust in the person being bullied, making threats, refusing to provide support when formally required to do so, and creating a hostile atmosphere (UAM Report, 2022).

Although there is no shortage of research in the literature on unethical behaviour in the academic environment (Cornoiu, Gyorgy, 2013), solutions to effectively address it are rarely proposed (Flynn, 2025). A problem with reporting undesirable behaviours in Polish universities is the so-called burden of individual heroism. It means that the person experiencing harm must interpret the situation on their own to recognize the violations within it. This often requires rejecting common in the university environment explanations that normalize and trivialize violent and discriminatory behaviour as ordinary, necessary for professional training, or even pleasant and inclusive (Kubisa et al., 2022).

These problems result in reduced well-being among both staff and students. Problems – such as anxiety disorders, depression, chronic stress and burnout – are a common phenomenon in the academic community (SWPS Report, 2024). It is therefore essential to seek practical ways of promoting the well-being of the academic community.

Well-being at work encompasses various aspects of working life. 'From the quality and safety of the physical environment to employees' sense of well-being at work, their perception of the working environment, the atmosphere in the workplace and the way work is organised' (International Labour Organization, ILO, 2009, p. 1). Measures to promote well-being at work aim to ensure the safety and health of employees, as well as to foster a sense of well-being in the workplace, and to create engagement and job satisfaction (ILO, 2009, p. 1). Employee well-being is a key factor influencing the long-term effectiveness of an organisation (ILO, 2009). That is why it is so important. According to Dodge, Daly, Huyton and Sanders (2012), well-being is the result of a balance between an individual's psychological, physical and social resources and the challenges they face. Imbalances between excessive demands and insufficient

resources lead to stress or burnout (Puchalska-Kamińska, Lądka-Barańska, 2019). Increasing resources enables employees to cope more effectively with challenges, stimulating engagement and enhancing their well-being. In the case of universities, this applies to members of the entire academic community – staff, PhD students and students. All of them together form the university community. The individuals comprising this community are often interdependent and engage in diverse relationships. Their complexity stems from the fact that we are dealing not only with people who play different roles within the academic environment, but also with individuals characterised by a high degree of individualism, coming from various social backgrounds and inclined to experiment with established conventions and the boundaries of acceptable behaviours (Morek, 2024).

3. Empowering Voices: The Ombudsman as a Catalyst for Change

The younger generations of students and workers are bringing about inevitable social change and speaking out against instances of abuse. Those who have been working in higher education institutions for years are also becoming bolder in speaking out about undesirable behaviour. This translates into an increase in the number of reports of such incidents (Map of Bullying, 2022[1]). Universities are seeking to respond to the expectations of internal stakeholders regarding a safe learning and working environment by, among other things, appointing academic ombudsmen.

The history of academic ombudsmen (ombudspersons, ombuds) at Polish universities began with the appointment in October 2011 of the Academic Ombudsman at the University of Warsaw. The significant increase in the number of ombudsmen occurred in the 2020s. It stems, among others, from the fact that young people, when choosing a higher education institution, now pay attention to aspects that candidates previously overlooked, including a sense of safety (Gałkowski, Zatyka-Szlachcic, 2024). Given the lack of a Polish model for the role of the academic ombudsman, the following research questions arise:

RQ1: Who is the academic ombuds?

RQ2: What role do academic ombuds play at universities and what defines it?

RQ3: What are the objectives of academic ombuds's activities?

4. Methods

To answer these questions, there was used data from a research project carried out in 2024 by the Research Section of the Academic Network for Safety and Equality (ASBiR), entitled 'Positions and roles related to safety, equality and diversity'[2]. They involved analysis of the information available on university websites or in their Public Information Bulletins (BIPs). The analysis covered regulations in force between January and June 2024. The research examined positions established to support and protect academic values and principles, including in particular equality and diversity, and to ensure safety in interpersonal relations. For the purposes of this article, the section of the ASBiR research concerning academic ombudsmen exclusively was utilized. The research indicated that of the 21 universities affiliated with KRUP, 10 of them have the role of academic ombudsman. They are: the University of Warsaw (UW), the University of Warmia and Mazury in Olsztyn (UWM), the University of Wrocław (UWr), the University of Rzeszów (URz), Adam Mickiewicz University in Poznań (UAM), Maria Curie-Skłodowska University (UMCS), University of Gdańsk (UG), University of Silesia (UŚ), Jagiellonian University (UJ) and Nicolaus Copernicus University in Toruń (UMK).

A thematic analysis of the data was carried out in line with the research questions set out above. The data obtained were categorised thematically into three groups: the definition of the academic ombuds's role, the role they play within the academic community, and the purposes of the ombuds's activities.

5. Research Outcomes and Discussion

In seeking an answer to the RQ1: Who is an academic ombudsman? very important are the four principles. According to the data, they are the basis for academic ombuds currently working in Polish higher education. These principles[3], which are of key importance for fostering the safety and well-being of those studying and working at universities, are presented in Table 1.

Table 1.
Principles governing the work of academic ombudsmen and their significance

The principle	Ombuds practice
Independence	no direct reporting to the university authorities, making autonomous decisions regarding, amongst other things, responses to reports, operating independently of other university bodies.
Impartiality	protecting academic values, staying impartial.
Informality	acting as a source of support, information and advice, promoting ADR, not accepting formal complaints, not conducting formal proceedings, not participating in decision-making, not issuing binding decisions.
Confidentiality	not disclosing the identity of the person making the report or the information provided, without consent, (exception: where required by law).

Source: own work.

The academic ombuds's commitment to resolving disputes amicably and addressing difficult interpersonal situations before they escalate into conflict are directly link to a shift towards a more conciliatory organizational culture. The ombudspersons acts as a confidant for those with concerns and provides support for the individual courage of those reporting irregularities. This is closely align with the principles underpinning their role. On the other hand, they are a key element of the structure from the perspective of university management. They resolve difficult personnel matters and systemic issues identified during the course of their investigations.

Viewed through the lens of its operating principles, the role of the academic ombuds preserves, and may even strengthen, the university's fading social dimension (Report, 2025). This is crucial in the face of changes leading to the erosion of the academic community. The academic ombudsperson can help redefine the concept of this sense of community. By its very nature, the work of an ombuds influences the organisational culture of the university. The neutrality, impartiality and confidentiality inherent in this role have an impact on the university as an organisation, which is realised even if the academic ombuds 'simply sits in the office and waits for visitors' (Bloch, 2010).

Turning to the role played by academic ombuds at universities and by what it is define (RQ2), it is worth noting the four groups of roles identified in the ASBiR research: ombudspersons, representatives (plenipotentiaries), coordinators and specialists. The group of ombuds comprises 12 roles (listed in Table 2). One of these roles – the Academic Ombudsman acting as the Rector's Plenipotentiary – also falls within the category of representatives. The titles of ombuds roles most frequently refer to academic rights and values (8 positions); some of them include concepts related to equal treatment and anti-discrimination (3), whilst only one covers workplace bullying (Table 2).

Table 2.
Role and title of the academic ombudspersons

	Academic value and rights	Equality and anti-discrimination	Workplace bullying
Ombuds	Ombudsman for Academic Rights and Freedoms (UAM). Ombudsman for Academic Rights and Values (UJ, UŚ). Ombudsman for Academic Rights (UMCS). Rector's Representative – Academic Ombudsman (UMK). Academic Ombudsman (UR, UW). Ombudsman for Student and PhD Student Rights (UŚ).	Ombudsman responsible for conducting an investigation into a complaint regarding discrimination against a student or PhD student (UG). Equal Opportunities Ombudsman (UWM). Ombudsman for Equal Treatment and Anti-Discrimination (UWr).	
		Ombudsman for Equal Treatment and Anti-Bullying (UG)	

Source: compiled on the basis of ASBiR research, pp. 17-18.

The thematic areas indicated in the names do not always adequately reflect the full scope of duties inherent in the role of ombuds. The key role of the academic ombudsperson, as emerges from the above analysis, is protective in nature and closely linked to the well-being of members of the academic community. It is underpin by respect for rights and equal treatment.

When analysing the objectives of academic ombuds acting (RQ3), it should be note that, according to ASBiR research, these primarily involve upholding academic rights and values. They are sometimes described as ensuring compliance with academic or ethical standards, or safeguarding the rights and interests of community members (Table 3). Additionally, assisting in the alternative dispute resolution (ADR) was identify as a purpose of the ombuds's work (UW and UR). In Cybulko's view, this is an independent element of the academic ombudsperson's mission (ASBiR Research, p. 8). A unique feature is, among the objectives of the UW Ombudsman, improving the university by preparing proposals for the rector aimed at enhancing the university's operations (ASBiR Research, pp. 7-8). The objectives of the ombudsmen stem from diverse legal bases, as also illustrated in Table 3.

Table 3.
The objectives of academic ombudsmen and their legal basis

Legal basis	University, ombudsperson, goals
Rector's decree	Ombudsman UW: • promoting academic rights and values, • assisting in the amicable resolution of disputes, • improving University, as pointed above.
	Equal Opportunities Ombudsman UWM: • combating discrimination, • implementing systemic changes based on accessibility policy.
	Ombudsman for Equal Treatment and Anti-Discrimination UWr: • implementation of the principle of equal treatment and combating discrimination.
	• Academic Ombudsman UR: • supporting the application of academic rights and values, • promoting high ethical standards, • assisting in the amicable resolution of disputes.

Cont. table 3.

University statute	Ombudsman for Academic Rights and Freedoms UAM: • promoting among members of the academic community desirable attitudes and behaviours that are in line with the principles of social coexistence.
	Ombudsman for Academic Rights UMCS: • protecting the interests of the University community and the rights and interests of its members, as well as ensuring compliance with academic standards.
	Ombudsman for Equal Treatment and Anti-Bullying UG: • None.
	Ombudsman for Academic Rights and Values UŚ: • safeguarding academic freedom and ethical standards in research and teaching.
	Ombudsman for Student and PhD Student Rights UŚ: • protection of the rights of students, PhD students, postgraduate students and participants in other education forms.
Senate resolution	Ombudsman for Academic Rights and Values UJ: • uphold the academic rights and values enshrined in Polish law and internal regulations, in particular the University's centuries-old traditions and customs, the Academic Code of Values and the Code of Good Practice in Higher Education.
Policy on Combating Discrimination against Students and PhD Students	Ombudsman responsible for conducting an investigation into a complaint regarding discrimination against a student or PhD student UG: • conducting the investigation.
None	Rector's Representative – Academic Ombudsman UMK: • None.

Source: own analysis based on research.

An analysis of the objectives of academic ombuds clearly shows that academic rights and values require support to ensure they are upheld in the day-to-day running of universities. The Ministry of Science and Higher Education (MNiSW) also recognised this need. In 2025 this ministry took steps to analyse the scale of the problem of undesirable behaviour in higher education[4] and to prepare law changes preventing and eliminating such behaviour. On 23 January 2026 the MNiSW presented the first part of the 'anti-discrimination package for universities and institutes', as a result of the work of two advisory bodies. This legislative proposal promotes equality and combating workplace bullying. One of the ten amendments (and the first on the list) to the Higher Education Act is an obligation to ensure access to an academic ombudsperson for the community of every higher education institution. Such an obligation will be a landmark step in the development of the ombudsman's role in Polish higher education. This will be the first proposal to establish under Polish law an academic ombuds. The academic community is awaiting the final form of it. Especially since in other European countries, the role of the ombudsperson in higher education has been well establish for years[5].

Research indicates that, regardless of the terminology used, the rationale behind the objectives of academic ombudsmen is consistent, namely to promote respect for academic rights and values (ASBiR Research, p. 8). There is a lack of a Polish model for the ombuds's role. Despite that, universities are establishing such functions or positions, recognising the need to support members of their community and promote their well-being. The new law regarding

the academic ombuds will certainly be a step towards harmonising and standardising activities in this area.

6. Summary

The academic community face today many challenges and difficulties. It seems essential to provide support in the form of a specific role: the academic ombudsperson. The research findings provided answers to the research questions posed in the article, indicating that the role of the ombuds is crucial. It helps resolving many difficulties related, among other things, to unethical behaviour in higher education institutions (RQ1). The activities of academic ombud, conducted in an impartial, informal and confidential manner, have a tangible impact on changing the organisational culture of higher education institutions and fostering the well-being of the academic community (RQ2 and RQ3). It appears that Polish higher education is ready for this change, i.e. ensuring access to an academic ombudsperson for every member of the community. The MNiSW's announced work on introducing a legal obligation for such access offers hope for accelerating progress in this area. Among the forms of operation of this role or position existing in practice, three variants have been identified: 1. a term-based statutory body; 2. a person employed to the position (optionally: for a term, with the consent of the senate); 3. a person appointed to the role for a term, with the consent of the senate. The optimal solution appears to be for the legislator to leave the choice in this regard to the university authorities and to allow for the individual regulation of specific issues, including the definition of the ombuds's objectives and requirements.

This article is one of the first publications to raise awareness of the role played by academic ombudsperson in promoting the well-being of members of the academic community. The topic of the academic ombudsman's role in fostering the well-being of the academic community is a broad field. It is worth continuing in-depth research into the possibilities for systemic interventions, not only at ministerial level but also at individual universities, including educational profile (e.g. technical, arts and medical universities), taking into account their specifics. An important direction for future research will be the possibility of increasing tangible organisational support for the academic community not only through the role of the ombuds. Additionally, it would be useful to analyse models of the academic ombudsperson's relationship with university authorities in the context of the effectiveness of changes in organisational culture. Promoting those changes is essential for ombuds work.

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Footnotes

[1] A survey of the academic community conducted by the Science Watch Polska Foundation indicates that 63.5% of respondents have encountered workplace bullying. More than half of the respondents reported incidents of bullying – often to no avail.

[2] We use only a part of these research - a legal analysis of existing data carried out by PhD Anna Cybulko.

[3] As set out in the documents of the International Ombuds Association (IOA), the largest international organisation of ombudsmen: the 'Code of Ethics' and the 'Standards of Practice'.

[4] In this context, the term 'unacceptable behavior' refers to violence of any kind, bullying, discrimination (both direct and indirect), harassment and sexual harassment.

[5] The European Network of Ombuds in Higher Education (ENOHE) has been bringing together academic ombudsmen for over twenty years.

REVIEWERS

Prof. Wojciech JARECKI, University of Szczecin, Poland
Prof. Marek KUNASZ, University of Szczecin, Poland
Prof. Ewa MAZUR-WIERZBICKA, University of Szczecin, Poland
Prof. Patrycja ZWIECH, University of Szczecin