

THE PROSPECT OF AI USING IN SHAPING THE EMPLOYEES' WELL-BEING

Rafał NIEDBAŁ¹, Marzena PYTEL-KOPCZYŃSKA^{2*}

¹ Czestochowa University of Technology, Faculty of Management; rafal.niedbal@pcz.pl,
ORCID: 0000-0001-6898-8818

² Czestochowa University of Technology, Faculty of Management; marzena.pytel-kopczynska@wz.pcz.pl,
ORCID: 0000-0001-8850-8586

* Correspondence author

Purpose: The purpose of this paper is to test the role which AI tools may play in the promotion and maintaining the employees' well-being, examining both theoretical foundations and practical applications.

Design/methodology/approach: The paper is an attempt to identify, analyse and check the prospect of using AI tools to optimise the working environment conditions in order to minimise the occupational risk connected with negative aspects (e.g. Job Stress, Anxiety, Depression). The paper analyses the accessible source materials (scientific publications, research reports, legal acts) referring to the issue of using AI in the area of employees' well-being. The data from the secondary empirical research was used in the research.

Findings: It turns out from the discussion presented in the paper that the main determinants of the well-being are "Job Satisfaction" and "Job Security". From the employer's point of view, "Job Security" is the most significant determinant of the wellbeing. Whereas, "Job Satisfaction" is the most expected action shaping the level of well-being from the worker's point of view. At the same time, "Job Stress" and "Overall Health" are the least significant determinants of the well-being both for employers and workers. The performed identification and analysis of the Internet platforms with the built-in AI tools available in the market may support HR departments in the companies in drawing up effective strategies aimed to improve the working environment conditions, increase the workers' engagement and decrease the risk of occupational burnout.

Originality/value: The paper contributes to the scientific discourse referring to the possibilities of using AI technologies in the area of shaping employees' well-being. Numerous examples of AI tools available at the market show how the AI technologies may be used effectively to support the employees' well-being, raising the employees' professional life quality and contributing to the better performance of an organisation. The issues presented in the paper will give the possibility to create recommendation for HR specialists, how to integrate AI tools with the human resources management effectively in order to support the employee's well-being. The paper is original due to its multi-aspect approach to the scientific issue – considering both the employer's and employee's point of view.

Keywords: employees' well-being, artificial intelligence, working environment.

Category of the paper: general overview, point of view.

1. Introduction

The tools of artificial intelligence (AI) affect various aspects of the company organisation from the automatization of simple tasks to supporting decision-making processes at the highest management levels. They are getting more and more important as potential allies in shaping employees' well-being – in particular in corporate environments where the pressure on effectivity and adaptivity is constant. The employee's well-being understood as a condition of general job satisfaction, security, mental and physical health is getting more and more important in the context of competitive advantage and sustained growth. The use of AI tools may play a key role in harmonising the business requirements with the employees' needs.

The advantages of using AI tools in the context of employee's well-being comprise among others the personalisation of the career paths, monitoring and promoting of work-life balance and identification of stressogenic factors in the workplace. Nevertheless, the implementation of AI tools to support the employees' well-being is also connected with numerous technological, organisational, ethical or legal challenges which require detailed analysis.

The purpose of this paper is to check the role which AI tools may play in promoting and maintaining the employees' well-being examining both theoretical foundations as well as practical applications. The research focuses on the identification of ways in which the application of AI tools may contribute to the better understanding of employees' needs, optimisation of working conditions and counteracting the risk factors connected with the occupational burnout and other negative issues in the working environment.

The attempt to answer the following research questions may be helpful to meet the purpose of the paper:

- RQ1. What are the main determinants of the employees' well-being and is their impact on the employees' well-being equally significant?
- RQ2. How do the employees' expectations concerning the actions directed to the well-being culture in the workplace differ from the actions really taken by companies?
- RQ3. What categories of AI tools may be used to support the actions aimed to maintain or increase the employees' well-being?

The exploration of the above research questions will enable the preparation of recommendations for HR specialists how to integrate AI tools with the practices of human resource management in order to support the employee's well-being and at the same time to maintain the ethical and responsible approach to using personal data and keeping the privacy.

2. Literature review - employee's well-being

The literature presents the issues of life quality, happiness, well-being in the context of extremely important zone of professional life. The employees' well-being in the organisational meaning has a multi-aspect nature and is often subjective, it is a complex issue. The term of well-being is connected with a subjective assessment of the individual's life both in a cognitive context as well as the emotional one showing the level of life realisation and satisfaction (Karaś, Ciecuch, 2017; Diener et al., 2018). The well-being indicates the level of individual's life quality (WHO, 2022)¹, which is affected by the professional and personal life quality and experiencing positive emotions (Juchnowicz, Kinowska, 2023). The well-being means satisfaction of the significant needs for the organisation participants with the feeling of widely understood job security and satisfaction (Kinowska, 2021). The well-being as an multi-aspect issue joins both hedonic as well as eudaimonistic aspects (Deci, Ryan, 2008; Ciesielska, 2013; Fisher, 2014).

Well-being in the workplace contributes to the increase in productivity, the improvement of employees' morale and decreases the sickness absence which results in better effects of the whole organisation. Joining the well-being of the employees with the company performance, the identification, analysis and assessment of employees' well-being management practices is becoming the key issue in the area of HRM (Alfes et al., 2012; Kowalski, Loretto, 2017). Thus, the employee's well-being is connected with satisfying the needs arising from work process, feeling of safety, job security and satisfaction (Kozioł, Wójtowicz, 2016; Kulig-Moskwa, Nogeć, 2018; Wychowaniec, 2022). According to Grant et al. (2007), the achievement of assumed and expected objectives in the work process is a result of employees' well-being, which is visible in a psychological, physical and social dimension². Whereas, Budd and Spencer (2015) completed the above model with a crucial, fourth dimension of well-being, which is a financial dimension. Seligman (2018) applied a five-indicator PERMA model (five measurable elements of well-being) in the research on employee's well-being in the work process. In the model the following elements were used: Positive emotion (P); Engagement (E); Relationships (R); Meaning (M); Accomplishment (A).

The model proposed by Peter Warr, so called vitamin model, may be used to draw up good practices of employees' well-being management (Warr, 2010). It covers twelve most important features of work useful to analyse and assess the level of employees' well-being as well as the condition of the whole company. The comparison of features characterising the work process

¹ The term well-being was introduced to the health definition adapted by WHO in 1948 defining health as the condition of full physical, mental and social well-being and not only the lack of disease or disability (Bircher, 2005).

² The psychological area refers to subjective employee's feeling, his perception of reality concerning professional satisfaction, feeling of own possibilities. Physical dimension refers to experiencing physical health, occupational health and safety, health protection. Whereas, the social dimension is characterised with the quality of interpersonal relations, cooperation, support, trust.

to the occurrence of vitamins in the human body makes it possible to diagnose positive or negative effects of their existence for an individual as well as for the whole organisation. Dodge et al. (2012) pay attention to the fact that the majority of approaches describing the well-being focuses on its dimensions and not on its issue. According to them, the well-being should be characterised as the balance point between the set of psychological, social and physical resources which the unit possesses and the challenges it faces, whereas the level of well-being falls as a result of the advantage of challenges over resources. According to International Labour Organization, the well-being of each organisation participants determines its strategic efficiency (ILO). The well-being in the workplace refers to all employees covering both the material working environment conditions as well as psycho-social conditions, organisational climate, interpersonal relations (Guest, 2017). Thus, the human well-being depends on internal, external factors and their interactions included in the organisational culture, management methods and leading styles (Białas et al., 2023).

3. AI tools in the HR area

The number of AI tools addressed to HR (Human Resources) departments of an organisation has increased for a few years. Over 250 various solutions were identified in the research referring to the review of this kind of tools available in the market (Figure 1). They are used within the whole cycle of employee's life in an organisation (Hollister, Acarkan, Jyotishi, 2021)³. The AI tools supporting the organisation activities aimed to maintain the employees' well-being constitute 9% of all recognised tools. The ones used in the process of employees' recruitment constitute the most numerous group of AI tools (30%). However, it should be expected that the number of AI tools in the area of employees' well-being may grow significantly in the future. It may be confirmed with, among others, the fact that the European Union is introducing the AI Act. Pursuant to the justification of the request referring to the regulations creating the harmonised provisions about AI (proposal of EU regulation AI Act) *AI should be a tool used by people and the force contributing to the well-being of society, the final goal of which is to increase human well-being* (AI Act, 2021).

In the context of maintaining employees' well-being, AI is becoming an important tool which supports the management of employee's mental and physical health. Using the AI tools by HR managers in organisations enables the analysis, predictions and reaction to employees' needs in an automated and personalised way.

³ The World Economic Forum created the project 'Human-Centred Artificial Intelligence for Human Resources' as a response to the growing use of AI in the HR area. The project gathered the various society of experts to create a practical set of tools for responsible AI use in HR.

One of the key AI applications in this area is the use of sentiment analysis and mood monitoring in the employees' internal communication. Such tools can identify the changes in the employees' moods analysing text data from e-mails or communication platforms, which makes it possible to detect warning signals connected with the health problems or stress early⁴.

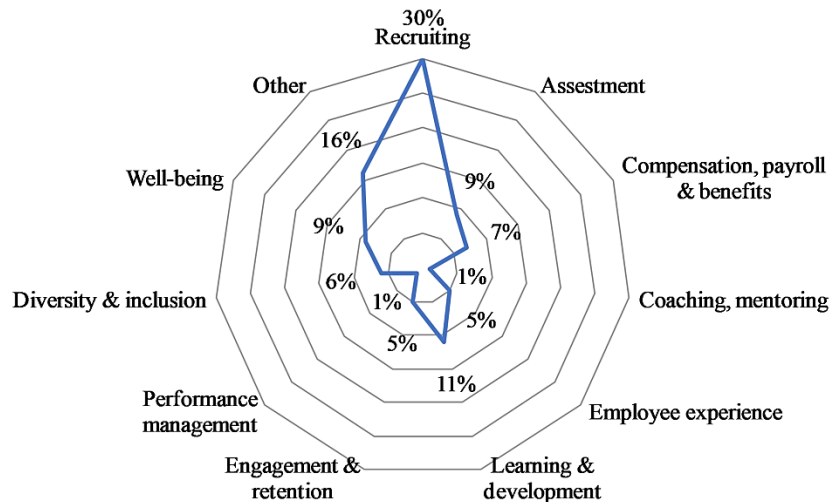


Figure 1. Number of HR tools using AI (%).

Source: drawn up on the basis of (Hollister, Acarkan, Jyotishi, 2021).

Another example is the development of personalised 'wellness'⁵ programmes with the use of machine learning algorithms. They may adapt the health and well-being recommendations to individual employees' preferences and needs suggesting appropriate exercises, diets or techniques of dealing with stress whereas, AI chatbots offer psychological support, give advice concerning 'wellness' and mental health. Thanks to natural language processing (NLP) and machine learning algorithms, these chatbots may talk to employees offering them the feeling of support and understanding⁶. They allow to personalise the users' experiences and provide efficient support in dealing with stress, fear, depression and other challenges of mental health. Using AI in supporting HR process, by the data analysis referring to absence, fluctuations and employees' assessments, enables to identify the patterns and trends which may indicate the problems with well-being. The predictive data analysis using the machine learning models to predict challenges connected with employees' well-being enables to take preventive actions pro-actively. These technologies may decrease the risk of professional burnout and other health problems. The last aspect covers the use of interactive learning platforms based on AI, which

⁴ The analysis of sentiment in the assessment of employees' well-being makes it possible to recognise and classify emotions expressed in the work-related communications in an automated way, which facilitates the understanding of the general mood among employees. Thanks to such solutions, the employers may identify positive, negative or neutral approach of employees, which allows quick reactions to the potential problems and improvement of working conditions.

⁵ 'Wellness' programmes focus on the promotion of healthy habits and lifestyle, which contributes to the improvement of life quality. They cover active health care, emotional balance, healthy nutrition, physical activity, rest and personal development.

⁶ AI chatbots may support well-being in the workplace by offering personalised advice referring to the stress management and relaxation techniques as well as by reminding about breaks for rest and exercises.

adapt the learning process to the employees' individual needs and preferences, supporting their personal and professional development⁷. Summing up, supporting the employees' well-being with the use of AI covers various kinds of tools. The proposal of their summary is presented in Table 1.

Table 1.

Categories of the Internet platform with the built-in AI tools shaping the employees' well-being in an organisation

	Categories	Name of the Internet platform with the inbuilt AI tools
1.	Analysis of sentiment and employees' monitoring	Culture Amp, Microsoft Viva Glint, Lattice, Officevibe, TINYpulse
2.	Creation of the personalised 'wellness' programmes	Gympass, Headspace for Work, Limeade, Spring Health, Virgin Pulse, Welltok
3.	Consultations with chatbots	Ginger, Joyable, Pepper, Tess by X2AI, Woebot, Wysa
4.	Supporting HR process	IBM Watson Talent, PredictiveHR, SAP SuccessFactors, UltiPro by Ultimate Software, Visier People, Workday People Analytics
5.	Predictive analysis of employees' data	Gloat, IBM Watson Talent Insights, Pymetrics, SAP SuccessFactors Workforce Analytics, Visier People, Workday People Analytics
6.	Leading employees' trainings	Cegid Talentsoft, Coursera for Business, Degreed, EdCast, LinkedIn Learning, Pluralsight, Udemy for Business

Source: own study.

The categories of the Internet platform with the built-in AI tools constitute the response to the research question RQ3. Thanks to the application of the Internet platforms with the built-in AI tools presented in Table 1, HR department may draw up effective strategies aimed to improve the working environment, increase the employees' engagement and decrease the risk of professional burnout.

4. Review of research – AI impact on well-being

Giuntella et al. (2023) conducted the research concerning the AI impact on employees' well-being and mental health in Germany (Table 2). The purpose of the research was to determine how the increasing presence of AI in the workplace affects the individual employees' feelings in the context of their job and life satisfaction, job security and general mental condition. The source of data obtained to the analysis were the data from the long-term panel research of households in Germany⁸, conducted by the German Institute of Economic Research (Deutsches Institut für Wirtschaftsforschung - DIW Berlin). The analysed data included a long, 20-year period of time (years 2000-2020) and covered the employees at the age from 25 to 65. The research was conducted on the sample of 16 thousand people (N = 16,000) who entered the labour market before 2000, i.e. much earlier than the AI technologies appeared in Germany.

⁷ Personalisation of learning not only increases the efficiency of education but also contributes to employees' greater engagement and satisfaction, which is crucial for their well-being.

⁸ German Socio-Economic Panel (German Sozio-oekonomisches Panel - SOEP).

About 62% of employees in the company pointed out the high exposure on AI in the workplace. The majority of professions endangered on AI covers programmers and IT workers.

Table 2.

Descriptive Statistics of the conducted research

	Determinants of well-being	Mean	Range
Giuntella et al. (2023) years 2000-2020 (N = 16,000)	Life satisfaction	6,90	11-degree Likert scale [0..10]
	Job satisfaction	6,89	11-degree Likert scale [0..10]
	Worries: job security	1,66	3-degree Likert scale [0..2]
	Worries: own economic situation	1,97	3-degree Likert scale [0..2]
	Mental health (MCS) ⁹	49,50	Point scale [from 0 to 100]
	Anxiety	1,98	5-degree Likert scale [0..4]
	Depression	0,08	Binary value [0 or 1]
Nazareno, Schiff (2021) years 2002-2018 N = 5718	Job Satisfaction	3,35	4-degree Likert scale [1–4]
	Job Stress	3,09	5-degree Likert scale [1–5]
	Overall Health	3,66	5-degree Likert scale [1–5]
	Job Security	3,38	4-degree Likert scale [1–4]

Source: own study on the basis of - Giuntella et al. (2023); Nazareno, Schiff (2021).

The research assumed that the employees' well-being comprises two main elements – life satisfaction and job satisfaction. The research results indicate that there has been a discrepancy in the level of life satisfaction between employees exposed on AI and the ones who are not exposed on AI in the workplace since 2015. The employees exposed on AI point out lower life satisfaction in comparison to employees not exposed. There has also been a significant fall in the job satisfaction among the employees exposed on AI since 2015. Examining the symptoms referring to the economic future, the employees exposed on AI are more anxious about their workplace safety and their personal economic situation. However, this research did not show a significant AI impact on employees' mental health, fear or depression.

The research presented by Nazareno and Schiff (2021) uses the data from General Social Survey (GSS) covering years 2002-2018 (Table 2). The analysis was performed on the group of N = 5718 employees. The research uses the main dependent variables from GSS: job satisfaction, stress at work, job safety and overall health condition for which the respondents indicated the response on a particular Likert scale.

The report 'Job safety in Poland 2023. Employee's well-being i.e. well-being at work' focused on examining the employees' and employers' prospects in the context of well-being at work. The similarities and differences in the way of perceiving the well-being were searched. Phone interviews (CATI) were performed with the representatives of employers (N = 204) and online interviews (CAWI) were performed at the Internet panel SW Panel with employees¹⁰

⁹ 'Mental Component Score (MCS)' is a measurement used in the health research and assessment which refers to the qualitative aspect of mental health and emotional well-being of the examined employee.

¹⁰ The research was conducted in the days 16.06-3.07.2023 by SW RESEARCH The Agency of Market and Opinion Research.

(Safety, 2023). The research participants were asked to define well-being. The individual defining of the ‘well-being’ term by the respondents was aimed to check how this issue is understood by employees and how by employers and what associations with this issue both groups have. The employees indicated the response ‘Calmness in life without stress’ (22% of all tested employees) as ‘well-being’ most often. Whereas, the employers chose the response ‘Mental health, mental comfort’ the most often (28% of all tested employers).

On the basis of the research results presented by Nazareno and Schiff (2021) and the report ‘Job safety in Poland 2023. Employees’ well being, i.e. well-being at work’ the proposals of the set of well-being determinants and actions directed on the well-being culture in the workplace were presented in the tabular approach (Table 3) and in the picture (Figure 2) in the light of two perspectives of actions taken by companies and actions which, according to employees, should be taken in a company.

Table 3.

Well-being actions in the work place desired from the employees’ point of view

	Well-being determinants	Well-being actions in the workplace	The actions taken by companies		The actions which, according to employees, should be taken	
			Number of indications (%)	Mean (%)	Number of indications (%)	Mean (%)
1.	Job Satisfaction	Acknowledgement by an employer	47	34,0	51	46,0
		Financing the holidays	39		47	
		Shorter Fridays	16		40	
2.	Job Stress	Individual, free consultations with a psychologist	16	21,8	24	21,0
		Equal job distribution	36		38	
		Webinars/trainings about well-being	17		15	
		Possibility of engagement in social activity	18		7	
3.	Overall Health	Vouchers to the gym / physical activity / massages / physiotherapy	29	23,3	27	29,7
		Financing meals	23		27	
		Additional holidays / partial work	18		35	
4.	Job Security	Introducing flexible working time	37	36,0	35	32,0
		Possibility of working from home	35		29	

Source: own study on the basis of – Nazareno, Schiff (2021); Safety, 2023.

As it results from the information presented in Table 3, ‘Job Security’ (flexible time and work forms, on average 36,0%) is the most significant determinant of well-being from the employer’s point of view). Whereas, ‘Job Satisfaction, (recognition of the employee’s engagement, financial support of holidays, shorter work time on Fridays – on average 46,0%) is the most expected action shaping the level of well-being from the employee’s point of view.

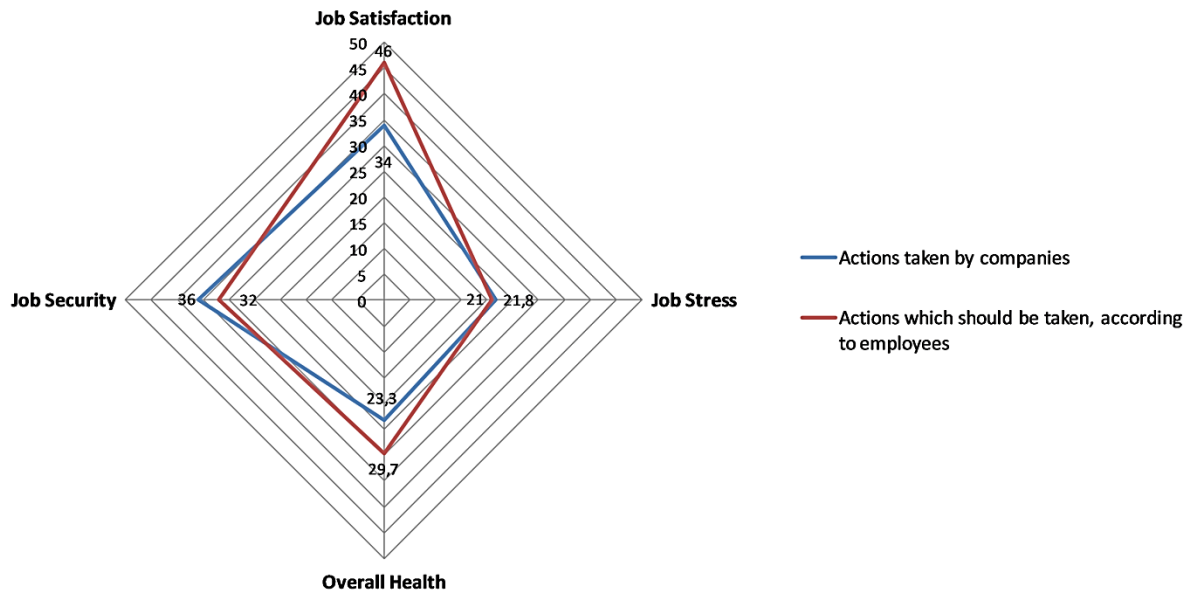


Figure 2. Well-being determinants – the average number of employees' indications (%).

Source: own study on the basis of – Nazareno, Schiff (2021); Safety, 2023.

At the same time, it can be noticed that 'Job Stress' (mean 21.8% and 21.0% respectively) and 'Overall Health' (mean – 23.3% and 29.7%, respectively) are the least significant determinants of well-being for both employees and employers. Referring to the formed research question RQ1, it is possible to state that 'Job satisfaction' and 'Job Security' are the main determinants of well-being. The impact of the employees' well-being is differentiated.

When it comes to the research question RQ2, the employees' expectations referring to the actions directed on the culture of well-being in the workplace differs from the actions really taken by companies. These differences are the most visible in the case of well-being determinants 'Job Satisfaction' and 'Overall Health'.

5. Conclusion

The companies are more and more aware of the need to regard the employees' well-being in the workplace as a key factor. The growing tendency to draw up and implement global policies in the area of health promotion (healthy life style, diet, good mental feeling) should be emphasised. The well-being in the context of the efficiency of the organisation functioning is a condition in which employees experience positive mental health, job satisfaction and work – life balance. It covers such aspects as safety, job security, possibility of personal and professional development, appropriate support from management and positive relations between employees. Taking care of employees' well-being is expressed in the humanisation of work organisation, which means the strive to perform professional desires of the work process participants, to satisfy the needs of recognition, self-development of the employee.

It turns out from the discussion presented in the paper that the main determinants of the well-being are “Job Satisfaction” and “Job Security”. Their impact on the employees’ well-being is varied. From the employer’s point of view, “Job Security” (flexible work time and forms) is the most significant determinant of the wellbeing. Whereas, “Job Satisfaction” (recognition of the worker’s engagement, financial support of the rest, shorter work time on Friday) is the most expected action shaping the level of well-being from the worker’s point of view. At the same time, “Job Stress” and “Overall Health” are the least significant determinants of the well-being both for employers and workers. The employees’ expectations relating to the actions directed to the well-being culture in the workplace differ from the actions really taken by the companies. The differences are the most visible in the case of the well-being determinants “Job Satisfaction” and “Overall Health”. The performed identification and analysis of the Internet platforms with the built-in AI tools available in the market may support HR departments in the companies in drawing up effective strategies aimed to improve the working environment conditions, increase the workers’ engagement and decrease the risk of occupational burnout.

The attention should be paid to some limitations connected with the issues presented in the paper - the data coming from various secondary empirical research was used in the performed analyses.

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