

SOFT VS. HARD COMPETENCES ON THE MOVE: EDUCATIONAL CHOICES AND MOBILITY BEHAVIOURS AMONG YOUNG ADULTS

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Purpose: The main objective of this article is to identify which competencies, i.e. hard or soft, young adults are more inclined to develop, when they engage in this development, and whether their needs related to competency development influence their communication behaviour.

Design/methodology/approach: Empirical research was conducted in the second quarter of 2025 using the Computer-Assisted Web Interview (CAWI) method. The research tool consisted of 27 substantive questions and 13 questions concerning the socio-demographic characteristics of the respondents, with this article focusing on the analysis of selected results.

Findings: Young adults are more likely to develop hard competences than soft competences. What is more, they are more inclined to devote their leisure time to developing hard competences. However, this does not directly translate into aspects related to travelling to training sessions and courses, in particular the frequency of travel and the distance covered.

Research limitations/implications: The geographical scope of the study was limited to the Upper Silesian-Zagłębie Metropolis (GZM), which is characterised by specific infrastructural, cultural and spatial conditions. A potential direction for further research could be young adults classified as NEET (Not in Education, Employment, or Training), i.e. young people who are not working, studying or actively seeking employment.

Practical implications: This research may provide guidance for training institutions and the GZM in shaping the careers of young adults and developing educational programmes. It also provides interesting conclusions for entities responsible for managing transport systems in the GZM.

Social implications: When young adults have free time, they are more likely to improve their hard competences than their soft competences.

Originality/value: The analysis allows us to learn about the attitudes and behaviours (including communication behaviours) of young adults living in the GZM who develop their competences in leisure time.

Keywords: competences development, leisure mobility, sustainable mobility, young adults.

Category of the paper: Research paper.

1. Introduction

In today's dynamic times, characterised by technological and digital progress, access to vast amounts of data, and increased awareness of sustainable development, economies are facing staff shortages. Symela and Stepnikowski (2021) point out that as a society we face challenges such as personalised universal education, digital illiteracy and technological unemployment.

As part of its activities related to the development and education of European Union citizens, the European Commission (2025) pointed out that:

- Nearly 78% of companies in the EU report difficulties in finding employees with the necessary qualifications.
- In 42 sectors – from construction and healthcare to engineering and IT – have staff shortages,
- 4 in 10 adults in the EU lack basic digital skills, even though these are needed in over 90% of jobs.

That is why the Skills Union was created in 2025 to support the development of skills for high-quality jobs, upskilling and reskilling.

Among adults, young adults may consider their competence development complete at the level of first or second cycle studies. The current trend provides grounds for concluding that it is necessary to continuously acquire knowledge, skills and social competences, which are the key to professional success. In their report "Competences of the Future", Woch and Śledziwska (2021, p. 21) note that it may be interesting to examine more closely the role played in shaping employees' competences by the training courses that employees undertake independently in their leisure time. This idea guided the authors of this article. The study conducted for the purposes of this work therefore aimed to identify the competences that young adults living in the GZM are most interested in, in particular those developed in their leisure time outside of work and study. It was also noted that young adults' interest in developing their skills may be reflected in their communication behaviour, leading them to travel more frequently and further to attend training courses.

Post-pandemic changes related to the spread of remote educational services are affecting sustainable urban mobility, including leisure mobility (Kos et al., 2022, p. 96). The need to improve competences in stationary and hybrid forms affects mobility of people participating in such activities. It contributes to the generating of additional communication needs. If the activity is carried out during free time from work or formal education, it directly affects leisure mobility. Leisure mobility is linked to the category of optional travel. Travel undertaken by residents of urban areas in connection with leisure activities is an important, though underestimated, issue for those responsible for planning and managing sustainable urban mobility. Therefore, one of the objectives of the presented study is to determine whether the activities undertaken by young adult residents of the GZM in leisure time to improve their

competences have an impact on their transport behaviour in terms of the frequency and distance of their journeys.

The topic of competences, time, place and mobility in this area is, on the one hand, very interesting and, on the other hand, important in terms of market needs. With this in mind, this article considers the issue of competences development, although for the time being only in relation to young adults who are already participating in the labour market or are about to enter it. The main objective of the study was to identify the competences that are most often developed by young adults, especially in leisure time, and how these activities relate to their communication behaviours.

This publication presents the findings of key studies on the issue of competences development. It highlights the importance of competences development in the context of technological and social change. It also presents the key findings of identified studies on the mobility of young adults, pointing to an existing research gap on the issue of young adult mobility related to voluntary competence development. The publication presents the research methodology adopted and findings focused on the relationships between the declared preferences of the study group regarding the improvement of two types of competences: soft and hard. The results were discussed and key directions for future research were indicated.

2. Literature review

2.1. Competences and their development

Dynamic technological progress creates many opportunities and leads to the improvement of processes, which translates into new forms of work and the development of new competences. Furthermore, based on their research, Ciesielska-Maciągowska & Skrzek-Lubasińska (2024, p. 155) believe that these changes may lead to a reduction in the demand for certain professions, while increasing the demand for employees with high qualifications and digital competences.

On the other hand, Ćwiek & Maj-Serwatka (2024, p. 50) argue that digitalisation influences the behaviour, attitudes and sometimes even the personality of people who use technology. The authors point out that this also carries the threat of exclusion from the labour market due to a competences gap, which should be understood as the difference between the skills that employees have and those that are needed in the workplace.

On the one hand, it is clear that it is necessary to improve competences, but on the other hand, market data does not inspire optimism, as Przybył (2025) notes that only 33% of Poles aged 25-65 have a positive attitude towards learning, as many as 37% are sceptical, and 29% have a neutral attitude. Approximately 50% agree with the statement that learning is

enjoyable and satisfying, and over 60% agree that it is important for them to enrich their knowledge and skills. At the same time, almost 42% say that they no longer want to learn.

There is no consensus in the literature on the definition of competence itself (Filipowicz, 2004; Kwiatkowska-Ciotucha et al., 2021; McKinnon et al., 2017). Therefore, for the purposes of this publication, it is assumed that competence is a *set of skills, abilities, knowledge, attitudes and motivation that a person needs to effectively cope with tasks and challenges related to work* (Hecklau et al., 2016, p. 2).

Many researchers are trying to identify a competency model and develop an appropriate tool for its implementation. For example, Kannan & Garad (2021) presented a list of key competencies required of employees to cope with specific jobs and tasks in Industry 4.0, divided into three main areas: Garad (2021) presented a list of key competencies required of employees to cope with specific jobs and tasks in Industry 4.0, divided into three main established categories of competencies: technical, methodological, and social.

This publication initially divides competences into specialist-technical, managerial, social and personal competences (Szmit, 2018, pp. 17-29), but ultimately categorised them according to Armstrong (2011) into technical competences, also referred to as hard competences, and behavioural competences, also referred to as soft competences. As Benek (2024, p. 146) notes, the division of competences into soft and hard is particularly important in the educational process, which is significant in the context of improving the competences of young adults.

2.2 Young adults and their communication behaviours

Young people who use urban mobility systems are a group whose needs are poorly taken into account in transport planning processes, although they are a group characterised by a high level of mobility (Porter, Turner, 2019). However, it should be noted that the issue of young adults' transport behaviour is increasingly being analysed by the scientific community. Researchers working on this topic point to the relationship between transport behaviour and the stage of social life (Simons et al., 2017; Bopp et al., 2019; Haseeb, Mitra, 2024).

The authors of the report *Youth on the move: Young people and transport in the 21st century* (2024) point out that young people's motivations for travelling depend on both subjective factors (e.g. related to individual aspirations) and objective factors. The latter include, among others, the availability and quality of infrastructure. Interestingly, research shows that despite young adults being perceived as more sensitive to environmental issues, paradoxically, when it comes to transport choices, they do not necessarily choose more sustainable forms of travel (Suchanek, Szmelter-Jarosz, 2019; Vávrová, Brůhová Foltýnová, 2023). The way young adults travel is increasingly influenced by the availability of new mobility services (Gkartzonikas et al., 2025) and the availability of ICT tools (Wu et al., 2019).

People's preferences regarding how they spend their leisure time are one of the factors influencing transport needs (Szołtysek, 2011, p. 22). Unlike obligatory travel, leisure-related mobility is significantly dispersed spatially and lacks fixed patterns, which makes it difficult to manage urban mobility systems (Ohnmacht et al., 2009).

The research presented in this publication on leisure mobility related to activities aimed at improving hard and soft competences is an attempt to fill the gap in knowledge about the travel patterns of young adults.

3. Methods

This publication is based on empirical research conducted in the second quarter of 2025 using the Computer-Assisted Web Interview (CAWI) method. The proprietary research tool consisted of 27 substantive questions and 13 questions concerning the socio-demographic characteristics of the respondents. The research was conducted on a group of 500 people aged 18-34 who live in the Upper Silesian-Zagłębie Metropolis. The selection of respondents was quota-based and reflected the age structure of the general population of young adults living in the GZM. The dominant group were the oldest respondents, i.e. those aged 30-34 (49.8%), and the smallest group were the youngest respondents, under 19 (5.8%). Respondents aged 19-24 accounted for 26.8%, while those aged 25-29 accounted for 17.6%.

As presented in the introduction, the aim of this article is to identify which competences young adults improve more often. For this reason, variables directly related to the survey questionnaire questions referring to specific competences were used for the analysis. In addition, the competences considered were grouped into hard and soft competences (according to Armstrong, 2011; see Tables 1 and 2) based on the following sources of information: the Integrated Skills Strategy 2030, DigComp 2.2, the Global Skills and Competence Framework for the Digital World (SFIA 9), GreenComp, European Skills, Competences, Qualifications and Occupations, and the 2025 key competences from The Future of Jobs Report 2025 World Economic Forum. Talent management was added to the soft competences due to the fact that the focus is on a set of psychosocial skills and personality traits.

In addition to the variables directly corresponding to the questions in the research tool, additional variables were also created to express the respondent's general interest in improving the competences belonging to the analysed groups. Thus, two new variables were constructed, referring to (a) hard and (b) soft competences. When creating them, the number of hard and soft competences that each respondent has developed or has been developing over the last three years was counted (summed up). Since the number of soft competences to choose from (7) was higher than the number of hard competences (5), both variables were normalised by dividing

their values by 7 and 5, respectively. In this way, it was possible to compare distributions and perform analyses based on the summary variables thus created, without fear that the number of competences analysed would affect, for example, the results of the tests carried out. Similarly, two further variables were constructed to express respondents' interest in developing hard and soft competences in the future.

The Wilcoxon signed-rank test for dependent samples (Wilcoxon, 1945) was used to compare variables reflecting respondents' interest in improving their hard and soft competences. This test is designed for ordinal and metric variables that do not have a normal distribution. In addition, it is used for variables from dependent samples, which is important in this case, as the young adults surveyed could participate in different forms of training from both competence groups at the same time.

The relationships between variables expressing interest (current and future) in improving competencies (hard and soft) and those relating to the characteristics of relocation for the purpose of developing these competences were also examined. For variables measured on an ordinal scale, Spearman's rank correlation coefficient (Spearman, 1904) was used. For nominal variables, the chi-square test and Cramer's V measure (Cramer, 1946) were used, which additionally allowed the strength of the relationship identified by the chi-square test to be determined. Furthermore, in some cases, when a significant interdependence between the analysed non-metric variables was discovered, a correspondence analysis (Greenacre, 2021) was also performed, which allowed the categories of these variables to be linked together.

Within the framework of this study, referring to the objectives of the article, the following research hypotheses were formulated:

H1: Young adults living in the GZM developed hard competences more often than soft competences.

H2: Young adults living in the GZM are more likely to spend their leisure time developing hard competences than soft competences.

H3: Young adults living in the GZM are more likely to travel further and more often in leisure time to develop hard competences than soft competences.

The next section of this article provides a empirical results and a discussion. The conclusion summarises the paper and indicates applications and further research directions.

4. Results

Of the 500 participants in the study, i.e. young adults from the GZM, as many as 425 people have improved or are improving their competences over the last 3 years. These individuals were more likely to declare that they were developing hard competences than soft competences, although most of the soft competences indicated were also being improved by about half of the

people in this group (Table 1). Most often, the respondents participated in training courses on specialist industry knowledge (60.2%). Popular hard competences also included technology skills (54%) and digital skills (54%). Among soft competences, most people indicated the development of creative thinking (54.6%). Interestingly, respondents who declared that they preferred remote training accounted for only 13.2% to 29.2% of this group.

Table 1.

Current interest in improving hard and soft competences – percentage of respondents declaring the development of specific competences over the last 3 years

Type of competences		Participating in competence development	
		in any form [%]	remotely [%]
Hard	Specialised industry knowledge	60,2	25,8
	Technology skills	54,0	26,2
	Digital skills	54,0	29,2
	Interest in new ideas and the need to develop knowledge	45,0	16,6
	Service and customer orientation	39,8	15,8
Soft	Creative thinking	54,6	21,4
	Analytical thinking	49,4	22,0
	Resilience, flexibility, agility	46,8	17,2
	Empathy and active listening skills	46,8	14,8
	Self-motivation and awareness of one's strengths and weaknesses	46,2	19,0
	Leadership skills	38,8	13,2
	Talent management	32,8	13,8

Source: authors' own work.

Respondents were also asked about the competences they would like to improve in the future. This time, out of 500 respondents, only 2 indicated that they were not interested in developing their competences. Again, the respondents' answers slightly more often concerned hard competences than soft competences (Table 2).

Table 2.

Declared future interest in improving hard and soft competences – percentage of respondents declaring a willingness to develop specific competences

Type of competences		Participating in competence development	
		in any form [%]	remotely [%]
Hard	Technological knowledge enabling the performance of the profession	83,0	32,8
	Ability to use artificial intelligence and big data	78,6	33,6
	Cyber security skills	76,8	39,8
	Data management and analysis	70,2	30,2
Soft	Creative thinking	79,6	32,0
	Time management	77,6	34,8
	Team management	72,2	24,2
	Management skills	69,6	26,0
	Management of environmental issues	62,0	25,8

Source: authors' own work.

When comparing the declarations of young adults living in the GZM regarding the improvement of hard and soft competences, summary variables were used to express the general interest in developing these competences (described in section 3). The distributions of the analysed variables (Fig. 1) suggest that it is correct to conclude that young adults are more likely to participate in training and courses that allow them to improve their hard competences than their soft competences.

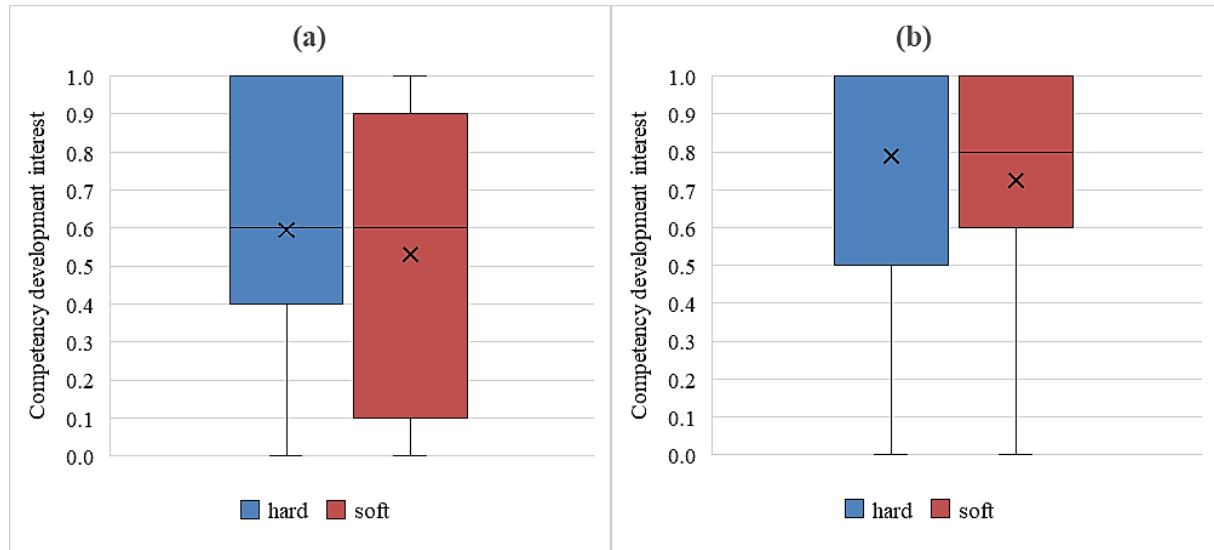


Figure 1. Current (a) and future (b) interest of young adults in developing hard and soft competences.

Source: authors' own work.

However, in order to formally show the differences in interest in developing competences, as measured by the aforementioned summary variables, the Wilcoxon rank test for dependent samples was used. The calculated p-value, which is lower than the assumed significance level (0.05), indicates the rejection of the hypothesis that in the group of young adults from the GZM, interest (both current and future) in improving hard competences is at the same level as for soft competences (Table 3). This also confirms the first hypothesis (H1) put forward in the article.

Table 3.

Wilcoxon test results for dependent samples regarding current and future interest in improving two types of competences

Compared variables	Wilcoxon test results	
	Standardised test statistic value	p-value
Current interest in developing hard vs. soft competences	-5.09	< 0.001
Future declared interest in developing hard vs. soft competences	-3.97	< 0.001

Source: authors' own work.

It was also found that current interest in developing hard and soft competences translates moderately into planned efforts in this direction in the future. The calculated Spearman's rank correlation coefficients between the analysed summary variables range from 0.37 to 0.46 (Table 4), which indicates a moderate relationship. Thus, those currently undergoing training

will not necessarily continue to improve their competences. However, young adults who have not yet participated in any form of competences development have such plans.

Table 4.
Matrix of Spearman's rank correlation coefficient values

Variables	Variables	
	Future interest in developing hard competences	Future interest in developing soft competences
Current interest in developing hard competences	0.413	0.420
Current interest in developing soft competencies	0.368	0.456

Note. In each case, p-value < 0.001.

Source: authors' own work.

A particularly interesting subgroup of young adults from the GZM are those who decide to devote their free time outside of study and work to improving their competences. This attitude generally indicates greater awareness on the part of the respondent regarding, among other things, the market situation, the demand for specific competences and the need to invest in their own self-development. In the surveyed group of 425 people who declared that they had developed their competences in the last three years, 80% of respondents improved their hard skills in their leisure time, and 75.8% improved their soft competences (Table 5).

Table 5.
Distribution of respondents in terms of the time indicated in which they improved their competences

Time during which the respondent developed their competences	Competences			
	hard		soft	
	number of responses	percentage	number of responses	percentage
At least partly during leisure time	340	80.0	322	75.8
Only during studying or working	62	14.6	47	11.1
Did not develop this type of competences	23	5.4	56	13.2

Source: authors' own work.

The difference between these groups of people (80% vs. 75.8% of respondents) does not seem significant. However, the Wilcoxon rank test for dependent samples, also conducted in this case, confirms that it is significant (Table 6).

Table 6.
Results of the Wilcoxon test for dependent samples concerning interest in improving two types of competences during leisure time

Compared variables	Wilcoxon test results	
	Standardised test statistic value	p-value
Interest in developing hard vs. soft competences, but in leisure time	-4.32	< 0.001

Source: authors' own work.

Furthermore, the distributions reflected in the box plots indicate that interest in improving hard competences during leisure time is, on average, higher than in the case of soft competences (Fig. 2). This confirms the validity of the second hypothesis (H2).

The conclusion that the value of work is very important is therefore valid, but in addition to material and existential values, the younger generation wants to fulfil themselves in their free time, outside of work. Therefore, we can talk about the emergence of a new, communicative work ethic, which is a symptom of a change in the value system of the younger generation (Kukla Nowcaka, 2019).

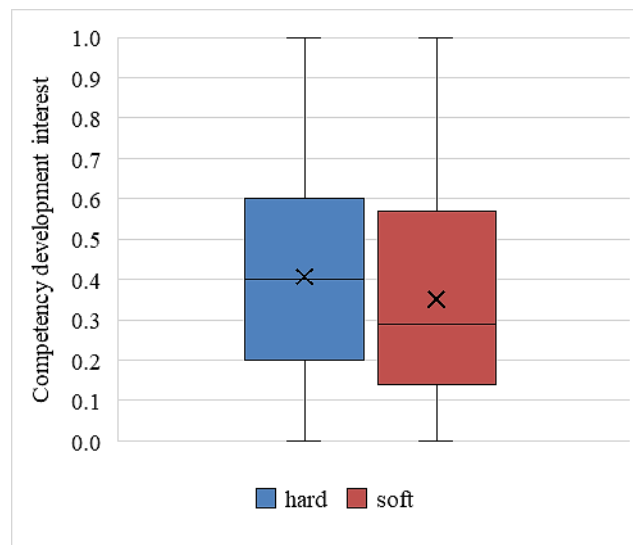


Figure 2. Current interest of young adults in developing hard and soft competences in their leisure time outside of study and work.

Source: authors' own work.

The rest of the analysis aimed to check whether, in addition to devoting their leisure time, young adults are also willing to travel more often and further to improve their hard competences rather than their soft competences. To examine this relationship, the chi-square test and the V-Cramer measure were used to assess the strength of the correlation. As the results show, interest in hard competences is significantly related to the frequency and length of trips taken for training and courses (in both cases $p \leq 0.001$, Table 7). However, the low values of the V-Cramer measure (0.23 for travel frequency and 0.19 for travel length) indicate that this relationship is rather weak. The results also show that interest in soft competences is significantly related to the frequency of travel for the purpose of improving these types of competences ($p < 0.001$, Table 7). Moreover, this relationship ($V = 0.26$) is slightly higher (though still weak) than in the case of hard competences ($V = 0.23$). However, commitment to developing soft competences does not translate into a tendency to travel longer distances ($p > 0.05$). These conclusions lead to the rejection of hypothesis three (H3).

Table 7.
Chi-square test results and V-Cramer's measure values

Type of competences	Characteristics of travels aimed at developing competences					
	frequency of travel			travel distance		
	χ^2	p	V	χ^2	p	V
Hard	36.25	< 0.001	0.23	25.17	0.001	0.19
Soft	41.93	< 0.001	0.26	15.00	0.059	–

Source: authors' own work.

An additional correspondence analysis leads to interesting conclusions that can be drawn from the correspondence maps obtained (Fig. 3 (a) and (b)):

- people with a high interest in hard competences tend to attend training courses frequently, i.e. at least twice a week; moreover, they most often choose training centres located approx. 5-15 km away from their place of residence,
- respondents with an average interest in hard competences generally travel sporadically (several times a month) or rarely (a few times a year); they are also quite diverse in terms of the training centres they choose – some of them are willing to travel even more than 30 km, some 15-30 km, but there are also those who choose training courses that take place relatively close by (1-5 km),
- respondents who are least interested in hard competences usually do not travel, as they choose remote training.

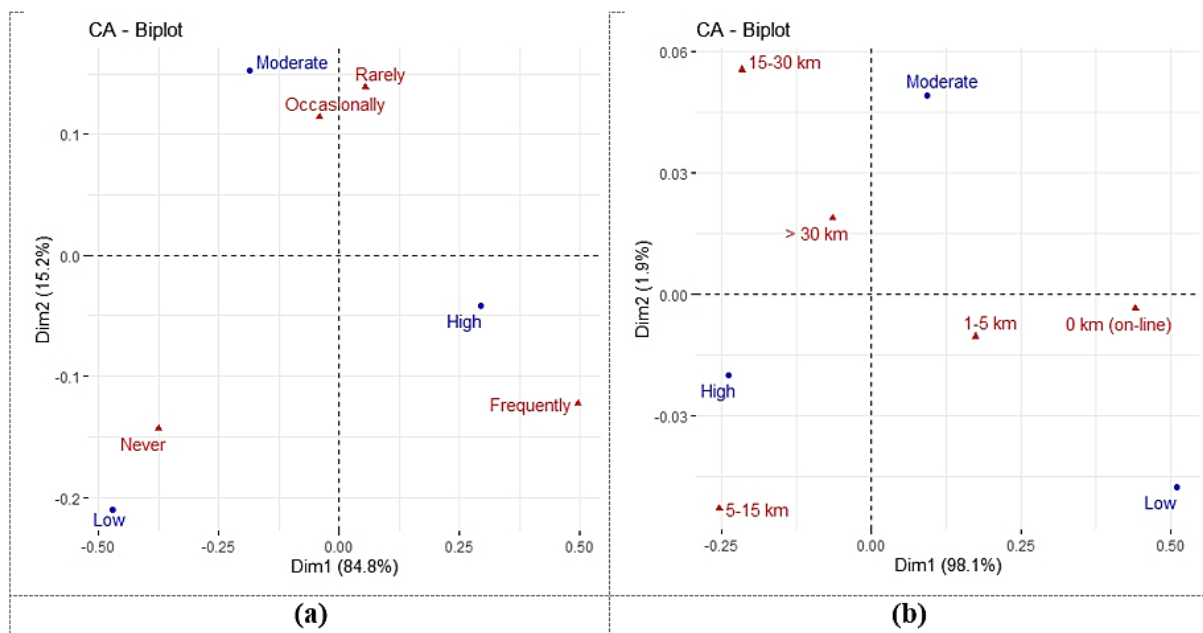


Figure 3. Correspondence maps showing how often (a) and how far (b) young adults from the GZM travel to develop hard competences*.

Source: authors' own work.

* Dim1 and Dim2 form a new coordinate system that was created during the execution of the correspondence analysis algorithm.

The correspondence map in Figure 4 shows that:

- people who are highly interested in improving their soft competences are willing to travel to training courses up to twice a week,
- some respondents with average interest will travel rarely (at most a few times a month), while others will choose online training and will not travel,
- those least interested in this type of competence will generally either choose training courses that take place sporadically (several times a year) or are conducted remotely (and therefore will not travel).

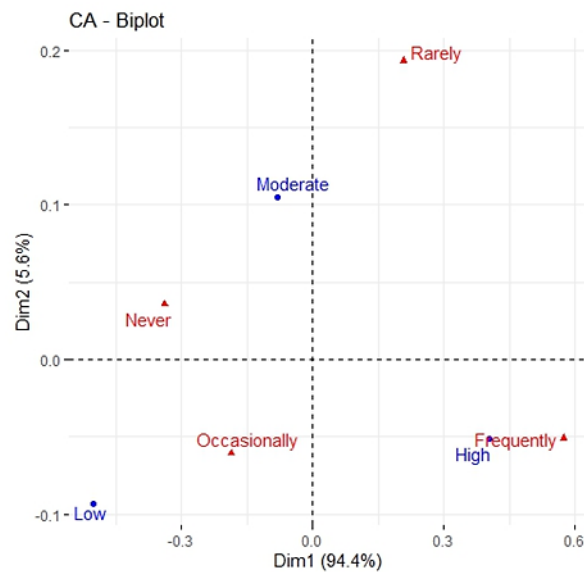


Figure 4. Correspondence map showing how often young adults from the GZM travel to develop soft competences*.

Source: authors' own work.

It is worth clarifying that the correspondence analyses only took into account those young adults who declared that they train in their leisure time (at least partially) from work and study, developing hard and soft competences accordingly. This was due to the fact that the question in the survey questionnaire asked respondents about travelling to develop their competences in their leisure time. In addition, the summary variables expressing interest in improving competences were categorised and in each case three categories were created: low, moderate and high interest.

* Dim1 and Dim2 form a new coordinate system that was created during the execution of the correspondence analysis algorithm.

5. Discussion

As Przybył (2025) notes, in Poland we are dealing with "success masking failure", as the analysis of the ESI (European Skills Index), Poland ranks third in the EU in terms of matching competences to current jobs, but at the same time ranks only 17th in terms of competences development. This means that neither employers nor employees are investing enough in the competences of the future.

From the perspective of the last few decades, the requirements for hard competences can be considered constant (Varkoly et al., 2019). However, soft competences are becoming increasingly important. Moczydłowska (2021, p. 9) refers to a study by ASTOR, in which 89% of participants assessed that in the near future they would most need technical competences outside their field, and 61% saw a need for development in their field. Nearly half of the respondents (47%) considered soft competences to be necessary.

Research by Deloitte Access Economics shows that by 2030, professions requiring a high level of soft skills will account for 66% of all jobs (PARP, 2023). According to a report by pracuj.pl (2024), 49% of young respondents indicate that soft competences are the most important for development, while the third most important skill mentioned by young people is specialist skills (42%). Despite this, research conducted for the purposes of this article shows that young adults still focus on hard competences. This may be due to the fact that soft competences cannot be easily quantified, while hard competences are more "touchable". Additionally, according to the Oxford Economics report (2021, p. 5), the main characteristics of young adults from Generation Z are agility, creativity and curiosity, which translates into their perception of soft skills as those that are seemingly easier to achieve.

The relatively low propensity of the surveyed group towards remote forms of training (13.2-29.2% of respondents) may seem surprising in the context of the post-pandemic spread of online education (Kos et al., 2022) and the availability of ICT tools (Wu et al., 2019). The preference for relatively short distances (5-15 km) combined with a high frequency of travel (at least twice a week) among those most involved in competence development suggests that respondents seek to optimise the time spent commuting - young adults are willing to invest their leisure time in their development, but do not want to waste it on unjustified, long and distant journeys. These data may also indicate the relatively high availability of activities aimed at improving the competences of young adults in the GZM area.

The identified differences in the transport behaviour of people developing hard and soft competences may provide guidance for institutions responsible for planning and managing sustainable urban mobility in the GZM area. The optional nature of the journeys studied, combined with their relatively high frequency, may hinder the achievement of sustainable urban mobility goals in the GZM area. Considering that young adults, according to the findings of Suchanek and Szmelter-Jarosz (2019) and Vávrová and Brůhová Foltýnová (2023), do not

always follow environmental criteria in their transport choices, despite their pro-ecological attitudes, it is worth considering expanding the transport offer with flexible solutions, such as Demand-Responsive Transport (DRT) based on zero-emission means of transport, supporting people who are improving their competences in forms that require physical travel. Mobility related to independent competences development in leisure time, still overlooked in scientific research, can be considered as a separate category, combining the characteristics of optional and quasi-obligatory travel: voluntary, but potentially regular, especially in the case of people who are strongly interested in improving their competences.

6. Summary

In today's world, young adults' perception of employees' knowledge, skills and social competences is changing in terms of their effective use by employers. Young adults want to acquire the necessary skills and competitive competences to manage increasingly complex and dynamic processes.

The research conducted for this article showed that young adults are more interested in developing hard competences than soft competences. Moreover, they are also more likely to spend their leisure time improving their hard competences than their soft competences. However, this interest does not directly translate into a desire to travel more often and further in order to improve these hard competences. The conclusions obtained therefore only confirm the first two hypotheses put forward in this study.

The authors are aware of the limitations of this study, which was conducted in the Upper Silesian Metropolis, which is characterised by specific infrastructural, cultural and spatial conditions. Furthermore, the conditions relating to leisure time and the mobility behaviour of young adults in order to improve their competences are not discussed in the literature, and it is difficult to use ready-made models in research.

A significant limitation of the study is the inability to relate the results concerning the mobility of young adults to the voluntary (leisure time) improvement of competences by this group. A review of the available literature indicates a significant research gap in this area. Furthermore, the authors did not find any relevant studies on other age groups. This may be due to the specific nature of this type of mobility needs (dispersion and instability can generate significant problems related to the management of this type of mobility).

The authors believe that it is possible for other researchers interested in this field to replicate the results obtained. One potential direction for further research is to extend the geographical scope of the study beyond the GZM area to other metropolitan areas and to focus not only on young adults, but also on other age groups (adults) or young adults outside the education system, representing the NEET (*not in education, employment or training*) group. The authors

also see a need for in-depth research on the impact of independent competences development activities on the communication behaviour of metropolitan residents.

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