

## COMMUNICATION CHOICES OF YOUNG ADULTS LIVING IN THE UPPER SILESIAN-ZAGŁĘBIE METROPOLIS RELATED TO COMPETENCE DEVELOPMENT IN THEIR LEISURE TIME

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**Purpose:** The aim of the article is to identify factors influencing the mobility of young adults living in the Upper Silesian-Zagłębie Metropolis (GZM) in relation to competence development during their free time not related to work and formal education. The study fills a research gap concerning patterns of leisure mobility and educational mobility.

**Design/methodology/approach:** The article presents the results of a questionnaire survey (CAWI) conducted in 2025 on a group of 500 young adults living in the GZM. The sample was selected using a quota method and reflected the age structure of the general population. The presented analysis focused on a group of 365 respondents who declared that they travelled in order to improve their competences in their leisure time.

**Findings:** The study identified factors influencing the choice of transport mode among young adults living in the GZM in connection with activities aimed at improving their competences in their free time.

**Research limitations/implications:** The limitation of the study comes mainly from the research assumptions – the study is based on respondents' declarations rather than observations of actual transport behaviour. The geographical scope, the specific nature of the area under study and the specific nature of the research group may influence the results obtained.

**Practical implications:** The results provide valuable guidance for public entities involved in planning sustainable urban mobility and transport policies for metropolitan areas.

**Social implications:** Understanding the factors that influence the transport decisions of metropolitan residents in relation to their leisure activities allows for better identification of areas requiring public intervention related to the implementation of sustainable urban mobility goals.

**Originality/value:** The article addresses the poorly understood area of transport choices related to competence development during free time unrelated to work and formal education. It provides original empirical data that allows us to identify patterns of leisure mobility related to competence development among young adults living in metropolitan areas.

**Keywords:** young adults, sustainable mobility, leisure mobility, competence development, Upper Silesian-Zagłębie Metropolis (GZM).

**Category of the paper:** Research paper.

## 1. Introduction

The European Union's approach to sustainable development as expressed in the European Green Deal, the requirements associated with the widespread digitisation of the economy, and the urgent need to strengthen the resilience of the European economy draw attention to the possibility of achieving synergistic effects because of implementing the concept of the so-called *twin transformation*. According to this concept, the transformation of the economy towards a digital and sustainable economy is a prerequisite for maintaining Europe's competitiveness (Muech et al., 2022). The implementation of the twin transformation requires a coherent approach to competence development (Tabares et al., 2025). It is necessary to provide training that enables various stakeholder groups to acquire the necessary digital competences to support sustainable development (Hofmann Trevisan, 2024). The scope of the competences required to support the implementation of the twin transformation goals is based on the *DigComp* (Cosgrove, Cachia, 2025) and *GreenComp* (Bianchi et al., 2022) competence frameworks adopted by the European Union. These competences can be acquired or improved through formal education (institutionalised, leading to recognised qualifications), non-formal education (alternative or complementary to formal education) and informal education (based on self-learning) (UNESCO Institute for Lifelong Learning, 2025).

Competence development through informal and non-formal forms of education often takes place during leisure time. Despite the popularity of distance learning, face-to-face and hybrid forms of education continue to play an important role, generating transport needs among people who choose to engage in such leisure activities. The increase in transport needs related to improving competences during free time from work and formal education generates increased external costs (social and environmental) of the functioning of transport systems. The accumulation of competence development services in central urban areas raises questions about the impact of mobility related to skills development during leisure time on the achievement of sustainable development and sustainable urban mobility policy goals.

The aim of this article is to identify the factors influencing the choice of transport by young adults living in the Upper Silesian-Zagłębie Metropolis (GZM) who travel in their leisure time for the purpose of competence development. In the presented study, the authors decided to focus on leisure mobility related to the improvement of skills by young adults. Young adults (aged 18-34) are a particularly active group in terms of competence development in their leisure time. This group is also characterised by the highest level of mobility and willingness to experiment with different means of transport, which makes it an interesting subject for research in the area of sustainable transport behaviour. The dynamically changing needs of the labour market resulting from the double transition may increase the mobility needs of the group under study, affecting the achievement of sustainable urban mobility goals.

## 2. Literature review

Making educational and career decisions in today's uncertain and complex world requires taking into account many factors, not only economic ones, but also technological changes, the digitalisation of the work environment and sustainable development. According to K. Nosek-Kozłowska (2025, p. 119), factors such as the need for self-fulfilment, career development, increased self-confidence and adaptation to new technologies play a key role.

For years, the European Union has been taking action to link sustainable development goals with digital challenges, and researchers point to digitalisation as one of the key factors for building the competitiveness of European enterprises, which also determines the achievement of climate goals in the EU (Czygżewska-Misztal, Cabańska, 2023, p. 109). It can be observed that there is a synergy effect between digital transformation and green transformation, i.e. the so-called "twin transition" (Rehman et al., 2023). The twin transition should be understood *as an economic and political approach focused on the simultaneous green and digital transformation of the economy as interdependent, interacting and inseparable processes. The combination of these two types of transformation allows for increasing the benefits of combining the implementation of digital technologies and the objectives of the European Green Deal (or, more broadly, sustainable development) and achieving the resilience of economies and societies* (Osiecka-Brzeska, 2025, p. 225).

Therefore, digital competence management is becoming one of the key tools for human resource management in companies operating in a knowledge-based economy. New types of jobs are emerging, requiring competences that we do not yet possess (European Commission, 2020a). Symela and Stępnikowski (2021) emphasise that as a society we face challenges such as personalised universal education, digital illiteracy and technological unemployment.

That is why it is so important to focus on the analysis of digital competences through the active and conscious participation of individuals, which guarantees personal and social development, and also counteracts various forms of digital exclusion and their further consequences (Ogonowska, Walecka-Rynduch, 2023, p. 632).

It can be noted that the European Union is not indifferent to activities related to improving citizens' competences. These activities have been undertaken for many years. However, in 2023, the European Declaration on Digital Rights and Principles for the Digital Decade was adopted, which places people at the centre of the digital transformation and helps to consolidate the framework within a set of common European values and principles. This declaration is reflected in the DigComp 3.0 guidelines, The Digital Competence Framework for Citizens with new examples of knowledge, skills and attitudes. It incorporates recent and emerging digital technological trends and their implications for digital competence, while maintaining the overall framework stability and technology neutrality (European Commission, 2026). In response to the need for change in education related to sustainable development,

the European Commission has introduced The European Sustainability Competence Framework – GreenComp. This programme focuses on improving competences for sustainable development, i.e. accepting the complex nature of sustainable development, visualising a sustainable future and taking action for sustainable development (GreenComp, 2026).

The above programmes are focused on various forms of education, so it is worth noting that, according to a report by the Central Statistical Office (2024, p. 41), formal education in Poland particularly concerns young people, among whom the share of those aged 18-24 (by 5.8 percentage points) and 25-29 (by 4.4 percentage points) has decreased compared to the previous survey conducted once every six years. As regards non-formal education, the level of participation decreased for almost all age groups between 18 and 69. However, there has been a significant increase in educational activity in the case of informal learning. This concerned all age groups, and in particular young people aged 18-24 (by 30.6 percentage points). As K. Nosek-Kozłowska (2025, p. 119), empirical data indicate the importance of non-formal education and self-initiated forms of learning, which is a development and update of classical theories, given the growing role of technology and micro-learning.

Both the DigComp and GreenComp competence frameworks provide a kind of roadmap for actions to support the population in the era of dual transformation. It is interesting to see what factors influence the choice of means of transport for various forms of competence development.

The concept of sustainable mobility was first used in European Community documents in *the Green Paper on the impact of Transport on the Environment - A Community strategy for "sustainable mobility"* (1992). The Green Paper pointed to the need to develop transport systems which, on the one hand, would effectively meet the transport needs of city dwellers and, on the other, would cease to generate excessive external costs in the form of environmental and social burdens. The literature on the subject indicates that achieving sustainable mobility requires a combination of three strategic approaches (Holden et al., 2020):

- efficiency strategies - requiring the implementation of efficient technologies that reduce the environmental impact of mobility, e.g. through the promotion of electromobility,
- change strategy - aiming to change existing travel patterns, e.g. through incentives to change the mode of transport,
- reduction strategy – reducing the number of journeys and shortening the distance travelled, e.g. by promoting remote forms of activity.

It should be noted that these approaches involve different challenges. The *Strategy for sustainable and smart mobility – European transport on the road to the future* (European Commission, 2020) identifies 10 flagship initiatives to increase the sustainability of mobility. Interestingly, all initiatives focus on technical aspects aimed at promoting and developing decarbonised transport technologies. The EU focuses primarily on technological issues in balancing mobility, while issues related to modal shifts or mobility reduction seem to be, at best, an additional effect of technological change. As indicated by the research of Holden

et al. (2019), this approach does not contribute to achieving the expected environmental effects to the desired extent, which makes it even more important to seek answers to questions about the factors influencing travellers' choice of mode of transport, not only in relation to obligatory mobility, but also optional mobility.

The paradigm of sustainable mobility is treated as an alternative to classical transport planning (Banister, 2008). In the classical approach, transport demand is treated as a derivative of other needs, while the concept of sustainable mobility requires considering that mobility itself can be a goal, especially if it is pursued during leisure time. The implementation of EU policy objectives in the area of sustainable mobility requires an understanding of the individual factors influencing transport behaviour decisions, including those relating to leisure mobility in the context of their environmental impact (Malekzadeh et al., 2025). It should be remembered that transport needs met by car (especially private cars), regardless of whether the journey is mandatory or optional, generate significant external costs, e.g. related to space occupancy, harmful emissions or congestion (Adamiak et al., 2016; Ceron, Dubois, 2005).

Mobility patterns may be related to lifestyle and demographic and social characteristics such as age, gender, level of education, family situation or financial status (Næss, 2006; Karpiński, Skrzypczak, 2025). The choice of mode of transport may be influenced by the spatial and temporal availability of mobility services, travel time and distance, the desire to maintain independence, or subjectively perceived convenience (Bina, Biassoni, 2023).

In the literature on the subject, leisure mobility is defined by excluding activities that generate the need to travel. Leisure mobility is therefore mobility that is not generated, for example, by work or formal education. Leisure mobility is a specific type of transport behaviour dependent on individual or group motives for spending free time (Toger et al., 2023). Due to its characteristics, leisure mobility is more difficult to predict and manage than obligatory mobility. This is due, among other things, to its non-routine and individualised nature (Ohnmacht et al., 2009).

Previous studies indicate that young adults are a social group whose needs are relatively poorly considered in transport planning processes, despite their characteristically high level of mobility (Porter, Turner, 2019). The authors of the report *Youth on the move: Young people and transport in the 21st century* (2024) point out that the transport choices of young adults are a combination of subjective factors (e.g. related to individual aspirations) and objective factors (e.g. availability and quality of infrastructure). Previous studies also show that despite the perception of young adults 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).

Taking into account the literature review, a research gap can be observed. Until now, authors have dealt with leisure mobility, but not in the context of travel aimed at improving competences. At the same time, it has been pointed out that the importance of non-formal education, also provided in face-to-face and hybrid forms, is growing, and therefore young

people need to use various means of transport to get to training sessions or courses. This article aims to identify the factors influencing the choice of transport by city dwellers, including young adults, related to improving their competences in their free time unrelated to work or formal education.

### 3. Methods

This article uses the results of a survey conducted in the second quarter of 2025 using the CAWI (Computer-Assisted Web Interview) method. The survey covered 500 people aged 18-34 living 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 survey questionnaire, prepared as an original, proprietary tool, contained 27 substantive questions and 13 questions with socio-demographic characteristics of the respondents. The most important information about the respondents is presented in Table 1.

**Table 1.**

*Structure of respondents in terms of key socio-demographic characteristics*

Variable	Categories	%	Variable	Categories	%
Age	under 19	5.8	Monthly income per person in the household	up to 2,500	12.0
	19-24	26.8		2500-4500	37.8
	25-29	17.6		above 4500	36.6
	30-34	49.8		NA	13.6
Gender	Female	53.4	Place of residence [population]	over 100,000	40.6
	male	46.6		50-100 thousand	19.2
Education	Primary and vocational	15.6		10-50 thousand	19.4
	Secondary	47.2		below 10 thousand	20.8
	higher	37.2			

Source: authors' own work.

The analyses were based on respondents' answers, which can be treated as qualitative variables directly related to the questions asked. Moreover, an additional variable was created, taking into account the declared preferred mode of transport for competences development and the frequency of travel by different means of transport. In this way, each respondent was assigned to one of six groups:

1. most often travels on foot, by bicycle or scooter,
2. most often chooses public transport,
3. most often travels by car – as a driver or passenger,
4. travels by various means of transport, but predominantly by sustainable forms,
5. travels by various means of transport, without any mode being predominant,
6. generally, does not travel, as they mainly choose online training courses.

The main objective of the analysis was to identify the factors that significantly influence the choice of transport used by respondents to travel to various types of training and courses in their leisure time. Due to the scale of measurement of these variables, the chi-square statistic was selected for the analysis. The results were supplemented with the V-Cramer measure, allowing the strength of the examined relationship to be determined (Cramér, 1946). In addition, selected significant relationships were further explored using correspondence analysis (Greenacre, 2021). This analysis indicates the relationships between categories of variables, not just between the variables themselves. Its most important element is a correspondence map, which shows points representing the categories of the two variables under study. A close distance between points is interpreted as a connection between these categories. Unfortunately, a correspondence map can only be obtained when the number of categories for each variable is greater than 2. Otherwise, the results are interpreted using an auxiliary dendrogram (e.g., using Ward's hierarchical method (Ward, 1963)).

This article is of an applied nature. It does not discuss the mechanisms of the statistical methods used in detail, as this is not necessary for the interpretation of the results obtained. All analyses and calculations were performed using SPSS Statistics and R software.

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

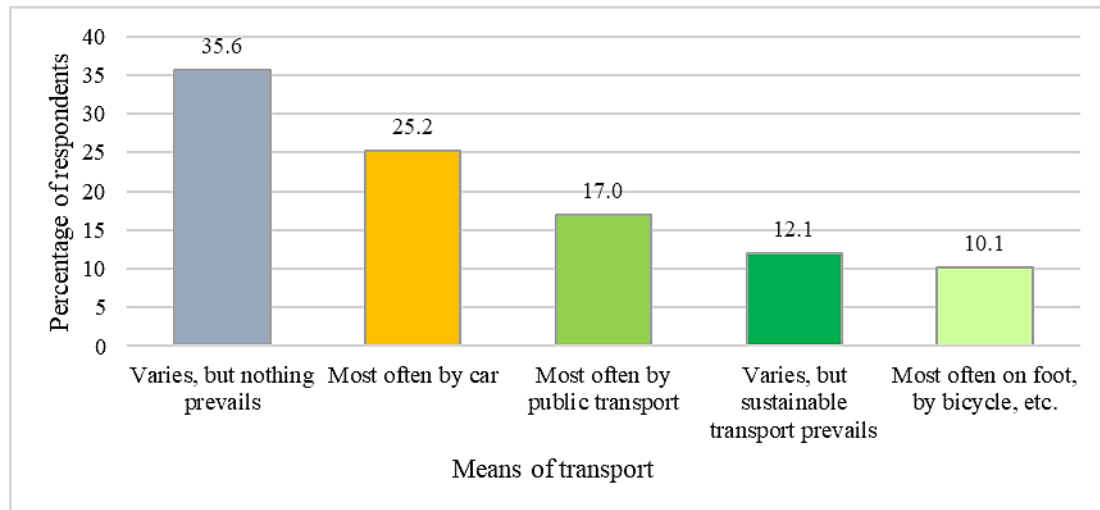
- H1:** the choice of means of transport used by respondents to improve their competences in their free time unrelated work and formal education depends significantly on their age, income, household size, and the frequency and distance of their journeys.
- H2:** the choice of public transport as a means of travel for the purpose of improving competences in one's leisure time depends primarily on the availability and quality of transport services, including, among other things, the availability of a direct connection to the destination, the distance and travel time, and the costs incurred.
- H3:** the choice of a car as a means of transport for improving competences in leisure time unrelated to work and formal education depends primarily on the respondent's belief that public transport takes too long, runs too infrequently, and does not guarantee a comfortable journey.

The results of the analyses carried out to verify the above hypotheses. The interpretation of the results obtained, and the discussion are presented later in the article.

## 4. Results

Out of 500 participants in the study, i.e. young adults from the GZM, as many as 425 people have improved their competences over the last 3 years. Of this group, 365 people travelled to participate in courses, training and to supplement their competences, of which (Fig. 1):

- the largest subgroup (35.6%) consists of respondents who travel using various means of transport (without indicating a preferred form),
- 25.2% of young adults most often travel by car,
- a total of 39.2% of people travel using various forms of sustainable transport.



**Figure 1.** Distribution of respondents in terms of the most frequently used means of transport for travelling to improve their competences.

Source: authors' own work.

Due to the objective of the study, only the group of 365 people who improve their competences and do so at least partially in a stationary form were subjected to further analysis. We examined which socio-demographic characteristics of respondents and factors related to their travel have a significant impact on the choice of means of transport used by young adults from the GZM to travel to training courses. For this purpose, a chi-square test was performed, and Cramer's V measure was calculated (Table 2). Test probability values (p-values) lower than the accepted significance level of 0.05 indicate that five characteristics are significant: (1) possession of a monthly ticket and (2) discounts on public transport, (3) frequency of travel, (4) age, and (5) the respondent's primary occupation. The strength of this relationship is rather weak, as evidenced by the low V-Cramer's measure values (Table 2). Surprisingly, neither income, education, place of residence, nor the number of people living in the respondent's household have a significant impact on the preferred means of transport.

**Table 2.**

*Chi-square test results and V-Cramer's measure values indicating factors that significantly and insignificantly influence the choice of means of transport*

Factor	Results of the correlation analysis		
	$\chi^2$	<i>p</i>	<i>V</i>
Possession of a monthly ticket	49.23	< 0.001	0.367
Having discounts on public transport	23.37	< 0.001	0.253
Frequency of travel	23.44	0.003	0.200
Age	38.03	< 0.001	0.186
Primary occupation	39.79	0.005	0.166
Place of departure	15.50	0.050	–

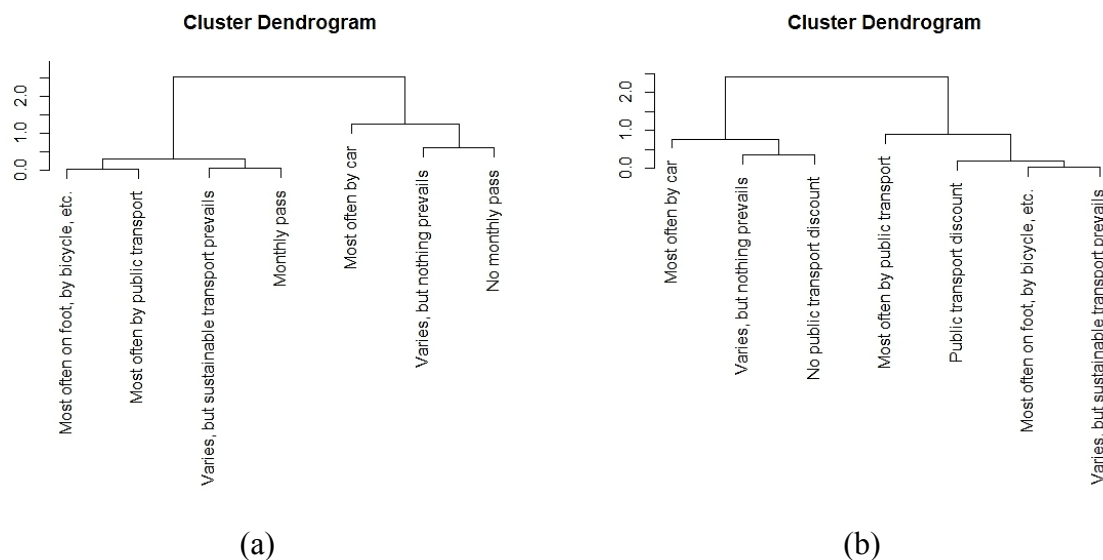
Cont. table 2.

Education	15.00	0.059	–
Monthly income	14.45	0.807	–
Number of persons in GD	14.30	0.282	–
Place of residence	13.82	0.312	–
Distance travelled	10.02	0.614	–
Gender	4.41	0.353	–

Source: authors' own work.

To further explore the results obtained, correspondence analysis was performed for the indicated significant relationships, and the relationships between the points representing the categories of the examined characteristics were interpreted. As already mentioned, when the number of categories is no greater than 2 (which is the case for the variables *Possession of a monthly ticket* and *Possession of public transport discounts*), the interpretation of the results can only be based on an auxiliary dendrogram.

It is not surprising that respondents who use public transport most often and, in general, sustainable transport, usually have a monthly ticket and discounts on public transport. Other people generally choose cars or various means of transport that are not predominantly sustainable (Figs. 2a and 2b).

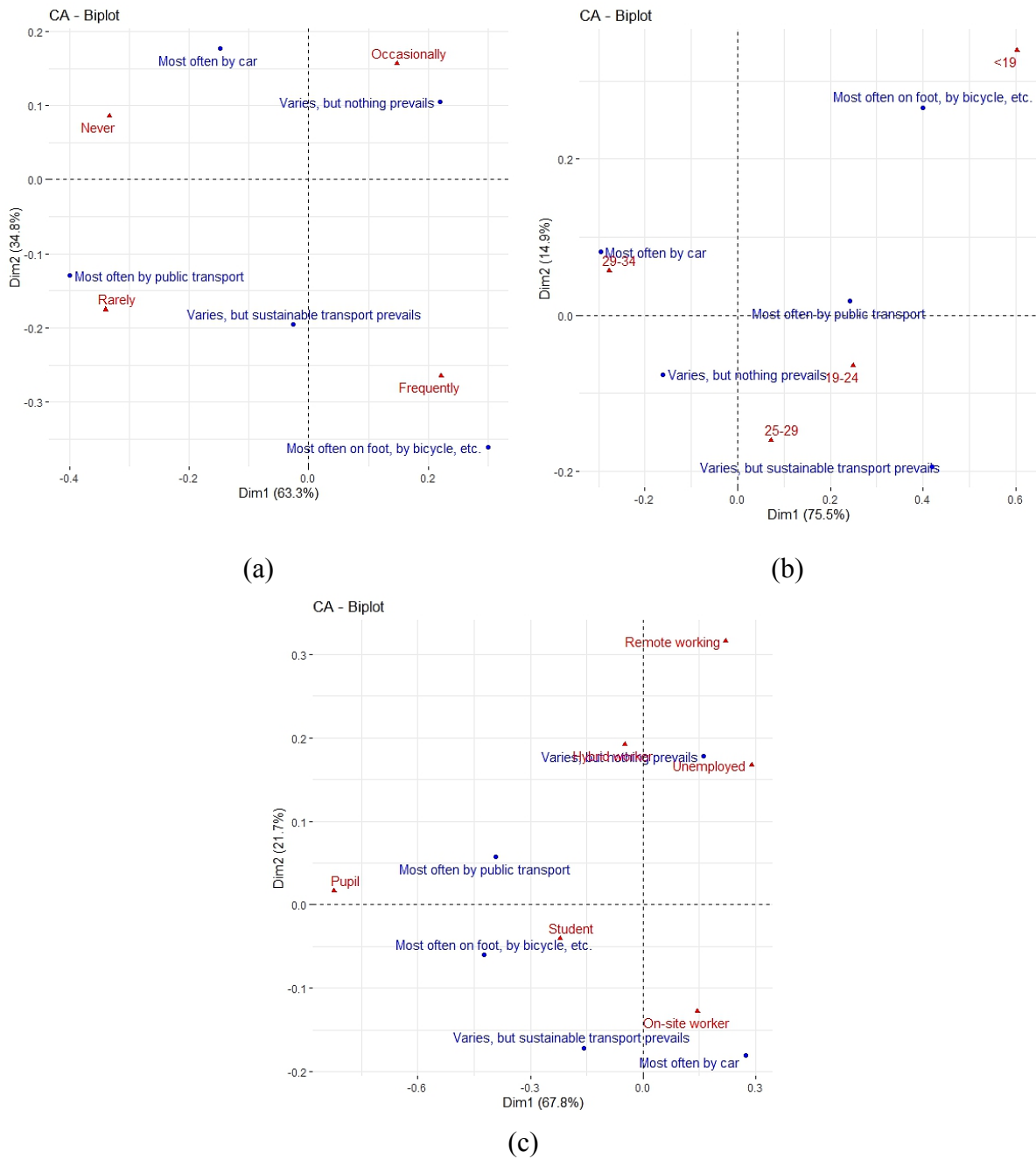


**Figure 2.** Auxiliary dendrograms showing the links between the most frequently chosen means of transport and the possession of (a) a monthly ticket and (b) discounts on public transport.

Source: authors' own work.

Furthermore, it can be observed that (Fig. 3a):

- people who travel frequently and very frequently to improve their competences most often do so on foot or by bicycle or scooter, although some respondents also choose various forms of transport, with sustainable transport predominating,
- young adults who travel sporadically to improve their competences generally use cars, but also other means of transport, with no clear preference for any particular form,
- respondents who travel rarely for training and courses most often use public transport.



**Figure 3.** Correspondence maps showing the relationships between the most frequently chosen mode of transport and (a) travel frequency, (b) age, and (c) the respondent's primary occupation<sup>1</sup>.

Source: authors' own work.

The relationships visible in the other correspondence maps (Figs. 3b and 3c) indicate that:

- the youngest respondents, under the age of 19, most often travel on foot, by bicycle or by scooter to improve their competences,
- people aged 19-24 generally choose public transport,

<sup>1</sup> *Dim1* and *Dim2* create a new coordinate system that was created during the execution of the correspondence analysis algorithm.

- this is also confirmed by the observation that travelling by public transport, on foot, by bicycle or by scooter is characteristic of students and pupils,
- people aged 25-29 use various means of transport to get around,
- the oldest people in this group (aged 30-34) most often travel to courses and training sessions by car,
- young adults working in an office also prefer to travel by car, although some people in this group sometimes choose other means of transport, predominantly sustainable forms of transport,
- respondents who work remotely, in a hybrid mode, and the unemployed use various means of transport, with no clear preference for any particular form.

The final stage of the study was to examine the factors that have a significant impact on the choice of public transport and cars as a means of transport for the purpose of improving competences. Once again, chi-square tests were performed and V-Cramer's measures were calculated. The results are presented in Tables 3 and 4.

**Table 3.**

*Chi-square test results and V-Cramer's measure values indicating factors that significantly and insignificantly influence the choice of public transport for the purpose of travelling to improve competences*

Factor	Results of the correlation analysis		
	$\chi^2$	$p$	$V$
No car	37.06	< 0.001	0.247
Ability to reach the designated location by public transport	19.15	0.014	0.177
Problem with parking space	15.95	0.043	0.162
Travelling to improve competences, only short distances	10.84	0.211	–
Convenience of travelling by public transport	9.91	0.272	–
Ability to arrive on time using public transport	9.41	0.309	–
Public transport is more environmentally friendly	8.30	0.405	–
The public transport offer is adequate for the respondent's needs	7.91	0.443	–
Travelling by car is too expensive	7.49	0.485	–
Another member of the household uses the car	5.48	0.705	–
Public transport services are attractive	5.03	0.754	–
The problem of congested streets	3.07	0.930	–

Source: authors' own work.

In summary, the choice of public transport as a means of travelling to training courses and classes depends significantly on three factors: (1) whether the respondent owns a car, (2) the possibility of reaching the destination by public transport, and (3) the availability of parking spaces.

**Table 4.**

*Chi-square test results and V-Cramer's measure values indicating factors that significantly and insignificantly influence the choice of a car for travelling to improve competences*

Factor	Results of the correlation analysis		
	$\chi^2$	$p$	$V$
Car ownership	30.20	<0.001	0.300
Travelling by public transport takes too long	28.13	< 0.001	0.205
Public transport runs too infrequently	24.46	0.002	0.191
Public transport does not guarantee comfortable travel.	19.95	0.011	0.172
Travelling by car is cheaper	19.05	0.015	0.168
Public transport vehicles are in poor technical condition	12.70	0.123	–
No direct public transport connections	11.94	0.154	–
Travelling too far	10.40	0.238	–
Lack of safety on public transport	8.71	0.367	–
Lack of public transport connections	7.89	0.445	–
Uncertainty about reaching the destination	5.84	0.665	–
Uncertainty about arriving on time	5.76	0.674	–

Source: authors' own work.

In turn, the choice of a car as a means of transport for the purpose of improving competences is significantly influenced by (1) car ownership and the belief that (2) travelling by public transport takes too long, and moreover, that public transport (3) runs too infrequently, (4) does not guarantee comfortable travel and (5) is more expensive than travelling by car.

## 5. Discussion

The study provides unique empirical data on the transport choices of young adults living in the GZM in relation to improving their competences in their leisure time. The results, set in the context of previous research on the subject, allow for a deeper understanding of the mechanisms shaping this type of mobility in metropolitan areas. The results confirm that young adults are not a homogeneous group (Rek-Woźniak, 2016, p. 89).

The declarations of respondents who use various means of transport without a clear preference (35.6%) may indicate a pragmatic approach to mobility, described by the International Transport Forum (2024) as characteristic of contemporary young people.

The clear differentiation of mobility patterns according to age confirms Næss's (2006) findings on the impact of this characteristic on transport choices. The transition observed in the study from active mobility (under 19 years of age) to the dominance of public transport (19-24 years of age) to a preference for cars (30-34 years of age) can be interpreted in the context of changing economic opportunities and life situations. This is consistent with the concept of Karpiński & Skrzypczak (2025), who point to the impact of the stage of life on leisure mobility patterns. Surprisingly, our study did not confirm a significant impact on the choice of transport mode of factors such as income, education, place of residence and travel distances. The reason

for this may be the relatively high homogeneity of the group in terms of the above-mentioned characteristics, as:

- respondents declared a relatively high level of income (73.2% of respondents indicated that the income per person in their household exceeded PLN 3,500, with approximately 70% indicating that their household consisted of no more than 3 people);
- the researched group is dominated by people with secondary and higher education (almost 85% in total);
- the characteristics of the spatial and temporal availability of public transport services in the GZM area are relatively uniform (InfoGZM, 2026).

The results for people aged 19-24 are particularly interesting, as they predominantly declare that they use public transport. This result corresponds with the observations of Bin & Biassoni (2023), indicating that people under the age of 26 are more likely to use public transport than other age groups. The dominance of car preference in the oldest age group (30-34 years) can be interpreted through the prism of the concept of life-course mobility - professional stability, living with a partner or parenthood may be a pre-condition for a greater tendency to use a car (Janke et al., 2021). The impact of the concept of life-course mobility on transport decisions is also confirmed by the results of the presented research, which indicate that the respondent's primary occupation is an important factor influencing the choice of transport mode.

The significant impact of having a monthly ticket and access to discounts on the choice of public transport may indicate that tariff policy can influence the timing of public transport passengers' transition to car use, but does not necessarily shape permanent transport attitudes, which again is consistent with research on the concept of life-course mobility.

An analysis of the factors influencing the choice of car reveals an interesting way in which respondents perceive public transport. Those who declare that they use public transport for leisure travel related to improving their competences indicate that the main barriers to choosing public transport are excessive travel time, infrequent services, and lack of comfort, which may indicate that public transport services in the studied metropolis are perceived as not meeting the quality criteria of potential travellers. This result corresponds with the concept of three strategies for achieving sustainable mobility presented by Holden et al. (2020) – it shows that the strategy of technological efficiency alone, manifested in rolling stock and ICT investments, is insufficient, and that the authorities responsible for shaping sustainable urban mobility policy should implement change or reduction strategy tools to a greater extent.

Also interesting is the statement by some respondents that travelling by car is cheaper than travelling by public transport. This result may reflect the difficulty of estimating the total costs of car use.

The significant correlation between travel frequency and choice of transport mode provides interesting insights in the context of the theory of transport habit formation.

## 6. Summary

The study allowed for the verification of the research hypotheses. The first hypothesis was partially confirmed – age and travel frequency significantly influence the choice of transport mode, but income, number of people in the household and travel distances are not significant factors influencing the choice of transport mode among young adults living in the GZM in connection with improving their competences. The second hypothesis, concerning factors influencing the choice of public transport, was also partially confirmed – the lack of a car, the possibility of reaching the destination and the availability of parking spaces proved to be key factors. However, contrary to expectations, the importance of direct accessibility of connections or travel time was not confirmed. The third hypothesis was fully confirmed – the choice of a car significantly depends on the perception of public transport as consuming too much time, running too infrequently and not providing adequate travel comfort.

From a theoretical perspective, the study contributes to the development of knowledge about leisure mobility. Mobility related to improving competences occupies an interesting position between strictly recreational mobility and mobility related to formal education, combining elements of both types. In the context of the sustainable mobility paradigm, the results indicate the limited effectiveness of a purely technological approach and confirm the need to take behavioural and qualitative factors into account in transport system planning.

The practical implications of the study mainly concern the planning of transport and education policies at the metropolitan level. The results suggest the need to:

- differentiating mobility balancing tools according to the age group of young adults, with particular emphasis on the specific needs of people aged 25-34 who are in a transitional phase between education and professional stability,
- improving public perception of public transport, not only through technological investments, but also by better tailoring the offer to the requirements of potential passengers.

The methodology of the study, based on a survey of respondents, has limitations related to the possible discrepancy between declared and actual behaviour. The nature of the study, which covers only one period, does not allow for the capture of changes in transport behaviour over time. It would be particularly interesting to examine how transitions between stages of life entail changes in leisure mobility patterns. Extending the study to other metropolitan areas would allow for an assessment of the specificity of the GZM in comparison with other agglomerations and the identification of universal and contextual factors influencing transport choices. It would be particularly interesting to compare the results from areas with different spatial structures (monocentric vs. polycentric) and different levels of public transport system development.

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