

ENVIRONMENTAL SOCIAL SCIENCE AND URBAN ENVIRONMENT MANAGEMENT: A REVIEW OF PATHWAYS LINKING POLICIES AND PLANNING TO CITIZENS LIVING BY THE RIVER

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Manuscript received: September 23, 2022

Revised version: November 14, 2022

MOUSAZADEH H., 2022. Environmental social science and urban environment management: A review of pathways linking policies and planning to citizens living by the river. *Quaestiones Geographicae* 41(4), Bogucki Wydawnictwo Naukowe, Poznań, pp. 127–139. 1 fig, 2 tables.

ABSTRACT: Urban environment management (UEM) and environmental social science (ESS) are two interconnected approaches that show significant potential for creating more sustainable and liveable cities. Their research has, however, been mainly disjointed, which may be because planning and policy have placed more emphasis on UEM than ESS at the same time. This research examined ESS in terms of the quality of life (QOL) criteria and sense of place (SOP) of citizens living by the river with the UEM intervention in the form of policies and programmes. The effects of fieldwork in the form of specialised and spatial interviews are presented in this research, which is usually ignored in the literature review of this type of analysis. The study aims to fill the current gap in this field in three European capitals by providing a reflective methodological account of fieldwork and the ‘elite interviewing’ approach. This paper produces a distinct form of the localisation of the research and sampling techniques and is as new, interactive and developing as possible. The results of the present study are underpinned by the conceptual model of research, which supports the main aim of this analysis and tries to examine the components of research in a new perspective. The findings highlighted that maintaining and strengthening ESS for citizens living next to rivers require innovative UEM, which uses urban creativity in the field of goals, urban settlements, strategies and management solutions to provide the base for increasing the liveability of the city and improving the quality of urban life.

KEYWORDS: quality of life, sense of place, Danube river, Budapest, Vienna, Bratislava

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Introduction

Environmental social science (ESS) as an interdisciplinary science seeks to examine the relationship between humans and the environment; it involves policymakers (Lidskog et al. 2022) and is one of the goals of environmental management, as well as social and sustainable development (Afshari et al. 2022). Further, it encourages

policymakers and governments to take a step towards inclusive green growth for citizens by supporting human development and social inclusion (Juniardi et al. 2022). The sense of place (SOP) and quality of life (QOL), which are the main criteria of ESS in this research, have been considered in different planning projects in recent decades, and various definitions and interpretations are still made for those parameters in the sections

of theoretical foundations of different sciences (Erfani 2022). The presence of natural factors in cities can increase the SOP and thus strengthen the QOL of urban dwellers (Tvaronavičienė et al. 2022). Urban rivers and parks as key elements in many European cities have played this role well in urban environment management (UEM) (Mulvaney et al. 2020; Hawthorne et al. 2022).

Increasing people's SOP in places that are close to nature can increase their adaptation to these places and help improve their QOL (Žlender, Gemin 2020); this issue requires planning based on their needs and desires and paying attention to the experiences and opinions of planners and city officials (Wang 2022). The QOL and people's well-being are improved when they are in places where they feel comfortable and appreciated (Hussein et al. 2020). The QOL depends on the type of place. These approaches and strategies are related to more comprehensive planning and field actions in open spaces, including rivers (Parsons et al. 2016). The SOP can be measured using integrated methods and indicators that make it possible to exchange values and knowledge among different involved actors such as government, authorities and policymakers (Masterson et al. 2017). The environmental impact of urban rivers is widespread and has been of interest to scientists, city planners and policymakers (Cai et al. 2019). Urban rivers are different because of their direct connection to the human habitat. In addition, those are public spaces that facilitate interaction between natural and urban areas and between people of different socio-economic backgrounds in the form of ESS (Hermida et al. 2019). Urban rivers in UEM create a link between urban and suburban green spaces, and the suburban green space is transferred to the city (Guo et al. 2019), which has a direct impact on the QOL and SOP of citizens (Mulvaney et al. 2020). Place attachment and social capital, which describe citizens' SOP and urban areas, are both associated with the QOL of urban dwellers (Gheitarani et al. 2020).

Moreover, in December 2019, new coronavirus disease (COVID-19) appeared as a serious threat from China and spread far and wide in other countries (Wu et al. 2020; Zhu et al. 2020). COVID-19 has spread globally and swiftly with major impacts on the QOL of people (Lara et al. 2020; Khan et al. 2021), and the

resulting quarantine has destroyed our SOP (Riva, Wiederhold 2020). UEM was also affected by this pandemic to the extent that transport in cities was controlled, creating a new type of ESS in the form of social distancing and distance from the environment (Mousazadeh et al. 2020). This study employs a qualitative approach with a research objective concerning participants' views, and subsequently, addresses how UEM policies, planning and evaluations can enhance the SOP and living conditions (QOL) of urban dwellers (Schröter et al. 2020). This qualitative-comparative study is the first step in understanding the policies and implications of city planners and stakeholders that can increase the SOP and QOL of citizens in the river landscape and their consequences for planning and managing areas of city dwellers located in the vicinity of the river. This article produces a distinct form of the localisation of the research and sampling techniques based on the perspective of elite interviewing, and is as new, interactive and developing as possible. This study has been carried out in Budapest, Vienna and Bratislava during 2020–2022.

Materials and methods

Description of the study area

Three case studies are conducted in various environmental, political and regional fields, including the three capitals of European countries through which the Danube river flows, and the densely populated areas of these cities along the river in Hungary, Austria and Slovakia (Fig. 1). The general requirement was that the river should pass through areas where the presence of the river affected the QOL and the SOP of people. Furthermore, all three studies were required to be in the same geographical and political context, so that the recognition of common targets across them is rendered feasible (Gerrits, Pagliarin 2021). In addition, the three case studies were to be situated in an environment populated by multiple professionals or specialists, including researchers, policymakers, government officials, urban professionals and planners, the intention being to use the obtained information in regional planning, psychological studies and environmental health. The location of many urban projects

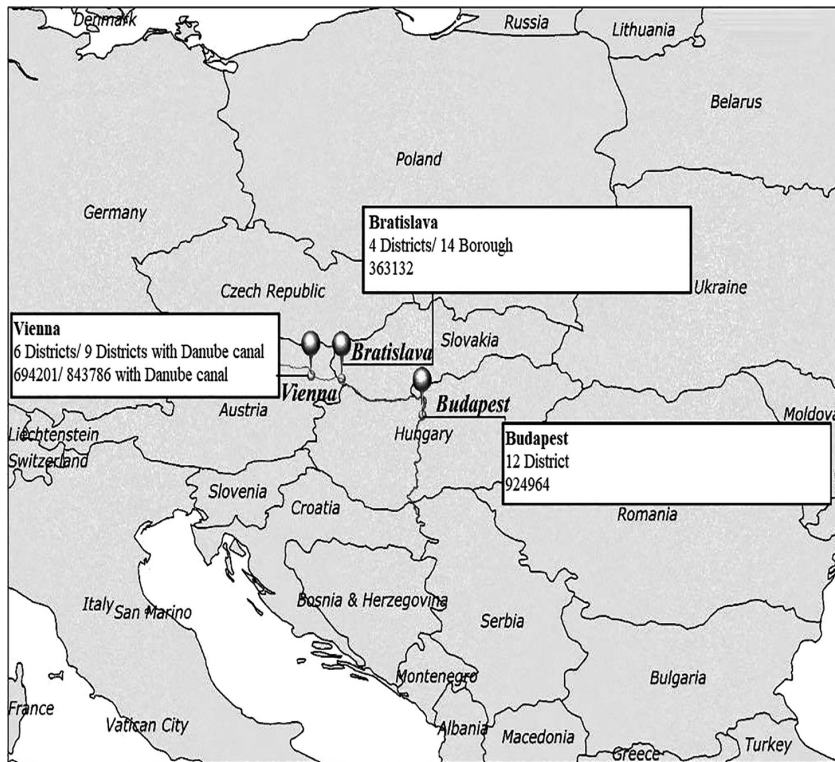


Fig. 1. Geographical location of case studies with details.
Source: own study.

along the river, as well as these locations serving as the target for multiple policy-emergent interventions, highlights the importance of these cities in all three case studies (Mousazadeh 2021). The Danube river has been considered a key element in the planning of stakeholders and researchers in all three cities.

The criterion for entering this study was having an experience of activity in QOL and SOP programmes in the municipalities of the regions that were located near the river in each city, as well as having been assigned the responsibility to oversee such projects' implementation. In addition, urban experts and researchers had to have an experience of the particular line of scientific activity employed in an undertaking in that region, or activity experience in any of the programmes related to the QOL and SOP in each of these areas; it was also required of them to have conducted scientific and practical research. In other words, individuals who shared the several required characteristics (Kuckartz, Rädiker 2022) were eligible to participate in the study. These participants were responsible participants in programmes, activities and projects in these areas (Group A). In the second phase, participants were asked to identify the people with whom

Table 1. Characteristics of participants.

R	Group A	Number	Organisation of participants
1	Officials, organisations, and policymakers	P1	Project managers and city managers
		P2	
		P3	
		P4	
		P5	
		P6	
		P7	Specialists and policymakers
		P8	
		P9	
		P10	
		P11	
		P12	
		P13	Experts and researchers of international research centres
		P14	
		P15	
		P16	
		P17	
		P18	
R	Group B	N	Participants
2	University researchers and professors, and urban service providers	12	Those introduced by Group A
Total		30	

Source: research findings.

they had the most collaboration during the programmes and projects in the form of municipal service providers, university researchers and psychologists who assisted them in those activities as the participants of the second stage (Group B). In general, the participants were individuals who had previous specialised knowledge of the research topic (Mirzaei et al. 2022). Participants' information is provided in Table 1.

Data processing

For more certainty, the text of the interviews has been sent to the participants for approval (Lan 2020; Rädiker Kuckartz, 2020). All notes were transcribed and in three cases participants made changes in the transcription of interviews because they confirmed that they were in a poor condition at the time of the interviews. Some participants were people who had participated in various international projects in two or three cities. Due to the existence of three different national languages in the three different cities, an attempt was made to recruit participants having

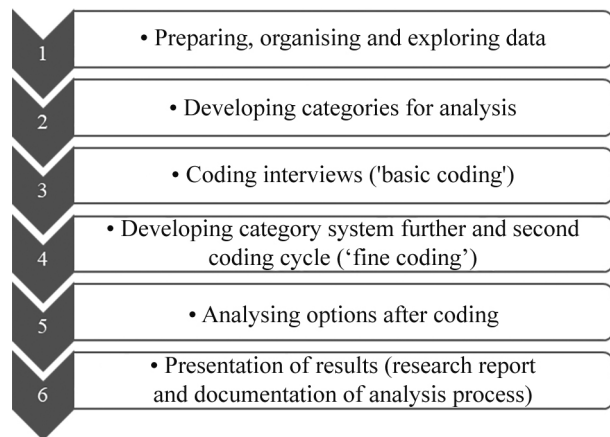


Fig. 2. The method of data analysis.

Source: adapted from Rädiker and Kuckartz, 2020.

an adequate fluency in English to facilitate the research process, although one case, where the researcher translated the information into English, needs to be counted as an exception. First, the main components (codes) were extracted from the interviews, and then the subset of each component was confirmed according to the initial studies and through observations and secondary documents (Consoli 2021). Finally, according

Table 2. Results of content analysis.

Themes	Sub-themes	Frequency
Socio-cultural	Increasing citizens' awareness programmes and creating culture	25
	Establishing sustainable security in regions	22
	Making efforts for citizen participation in urban affairs	18
	Providing environmental education and increasing SOP and ultimately QOL	16
	Increasing social responsibility	14
Urban infrastructure and facilities (urban services)	Building parks and green spaces around river	24
	Providing access to public transport	21
	Providing energy and water	16
	Allocating lines for walking and cycling	13
	Developing educational, cultural, and sports infrastructure in regions	13
Compatibility and efforts for increasing the QOL and SOP	Trust in government, municipalities and organisations	23
	Creating tax incentives and government loans in form of facilities and supports	21
	Creating empathy and unity among stakeholders and citizens can help achieve the goal.	20
	Prioritising programmes and projects in times of crisis such as COVID-19	18
Psychological and health	Launching healthcare measures during quarantine	24
	Providing social support by government and social institutions	23
	Providing environmental health	21
	Planning for vaccination and creating general peace of mind	20
	Having access to health centres and services	18
Policy approaches	Creating spaces for street celebrations, events, festivals, and seasonal exhibitions	23
	Planning for Danube tourism and its surroundings	21
	Having reconstruction, renovation, and restoration policies	19
	Having land use diversity	15
	Launching international and regional programmes and cooperation	14

Source: research findings.

to the study of themes and sub-themes and the researcher’s interpretations of the interviews, a framework of relationships was presented as a framework in the form of research themes and sub-themes (Table 2).

Results and discussion

Extracted themes and sub-themes

The process of identifying the relevant themes from the heart of an interview is considered one of the most interesting phases of content analysis, and is regarded as the final step in the content analysis process. After being forwarded to the participants for their agreement or revision, and after completion of the revision round followed by the participants’ final approval, the finalised

transcripts of the transcribed interviews are input into MAXQDA software. MAXQDA 2020 is used to specify themes and sub-themes based on the content of the transcripts, and the themes and sub-themes for the purposes of this software are maintained consistent throughout the entire research (Devan et al. 2020). Table 2 presents the main themes and sub-themes and their repetitions by the participants, reflecting their perspectives on ESS and UEM. The present study has tried to pave the way for other researchers with a new approach, which assumes the form of an ‘elite interviewing’ approach (Scally et al. 2021). The effects of fieldwork as specialised and spatial interviews are presented in this research, which is usually ignored in the literature review of this type of study. Therefore, according to MAXQDA analysis, the concept diagram (Fig. 3) of this research is presented as follows.

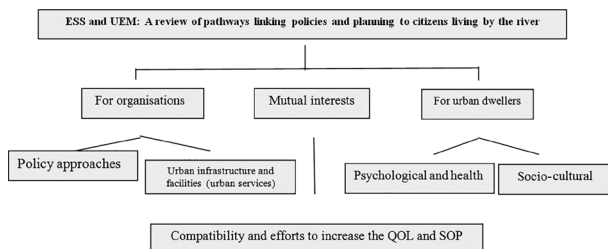


Fig. 3. Conceptual model of research. Source: research findings.

Socio-cultural issues

ESS affects the amount and type of relationships between people in society, and this relationship in social groups dedicated to a particular place increases their social capital and trust. Environmental factors in cities can be used by governments as an attractive reference for creating participatory programmes, increasing



Fig. 4. An example of Danube environmental education and citizen awareness (research findings). Source: photo taken by the author.

citizens' social responsibility, and ultimately, strengthening ESS. Urban rivers stabilise the environmental participation of citizens by creating memories and evoking the sense of socio-ecological awareness among citizens. Environmental beautification should be provided in local government programmes as environmental education. Environmental issues and citizen participation in urban planning can be addressed through ESS-related research (Nicolosi, Corbett 2018).

An expert indicated:

Citizens know that they have a role to play in the future of their place, thus their sense of belonging will become stronger and will automatically affect their sense of satisfaction, well-being and overall QOL (Participant 9).



Local governments, as the only local institutions in the city that are closely related to the lives of citizens, in cities with natural elements can play a very effective role in supporting the SOP, QOL and ultimately sustainable urban development (Participant 21).

Urban infrastructure and facilities (urban services)

The policies and plans implemented by local governments in terms of infrastructure and municipal services as UEM affect how individuals view and judge governments (Samsurijan et al. 2022). Their actions, as a policy tool, can affect the QOL of individuals and lead to their satisfaction (Majumdar et al. 2021). Public facilities and



Fig. 5. Access to public transport (research findings).
Source: photos taken by the author.

services around a community are vital for the livelihood and harmony of residents as the basic unit of living conditions (Li et al. 2021).

Based on the ESS, UEM and areas adjacent to rivers need new indicators to facilitate the monitoring and evaluation of the role of rivers as an environmental element in strengthening, growing and maintaining the SOP. This requires a review of urban plans and a change in the attitudes of city officials and managers, who do not usually include the concept of ESS in their planning.

Public transportation plays an important role in the sustainable development of the city, the creation of sustainable communities, and the improvement of access to other services and urban infrastructure. These actions ensure the QOL and make people maintain a sense of depending and attaching to their place (Participant 6).

An urban project manager verified the following:

In our working group, we have tried to expand green spaces as much as possible, along with the natural factors of the city, because we believe that sustainable urban development depends on the satisfaction of citizens. We also support green space projects offered by researchers and organisations (Participant 3).

Compatibility and efforts for increasing the QOL and SOP

“Governance is a custom, practice, values and organisations through which power in a state is executed involving the government selection procedure, replacement of government and accountability, rights for citizens, and ability of the state to devise and employ its policies” (Kaufmann et al. 2010). If people distrust government organisations and managers, there will be indifference to policy-making. Particularly, during the COVID-19 crisis, the issue of trust in governments is highly important and vital (He, Ma 2021; Mansoor 2021). Over time, citizens’ trust in positive actions has been assessed by the government (Galle et al. 2020).

The QOL directly affects the efficient view of the political system, and the attitude of trust in government and institutions also has a positive effect on QOL and SOP (Participant 12).

The QOL has become a measure of countries’ and governments’ successes in managing the affairs of citizens and their satisfaction. Therefore, measuring the QOL has been on the agenda of various international institutions and governments (Huete-Alcocer et al. 2022; Macků et al. 2022). People’s awareness of the critical situation and the creation of empathy and unity between government and citizens require categorisation as an urgent need (Brotosusilo et al. 2022), which it would be possible to fulfil through the implementation of activities, aimed at increasing citizens’ socio-ecological awareness, undertaken by policymakers and governments (AL-Hashimi, AL-Sayed 2022). It is possible to increase the QOL of citizens and their SOP by prioritising programmes (Brunet 2021; Roberts 2020).

Governments need to recognise key factors in order to create prosperity and thus make their citizens happy, especially in times of crisis such as COVID-19. Certainly, creating empathy and citizen participation in urban programmes, in addition to helping the intended goals, can strengthen citizens’ trust in governments (Participant 13).

Psychological and health

Individuals need a social support from governments and social groups during the COVID-19 pandemic to enhance their SOP and QOL (Alyami et al. 2021; Levkovich et al. 2021). Quarantine is a reasonable and appropriate solution in situations such as coronary heart disease; it can have a long-term effect on mental health, physical education and the process of socialisation and interaction with peers (Imran et al. 2020). Therefore, an understanding of the feelings and QOL of people is essential to properly meet their needs during this epidemic, and governments and health-related organisations must have comprehensive and practical plans for them. Caregivers of patients with COVID-19 initially demonstrated negative emotions (Mosazadeh et al. 2021), but the intensity of these negative emotions decreased over time (Sun et al. 2020).

A psychologist highlighted the following:

During the corona, we saw an increase in the number of mental disorders. Although the possibility



Fig. 6. Parks and green spaces along the river for spending leisure time and enhancing mental health (research findings).

Source: photos taken by the author.

of an increase in the incidence of mental disorders was not far-fetched due to long quarantine, loneliness and social isolation, the issue of mental health during the COVID-19 should be the first priority. Vaccination against COVID-19 has significantly contributed to improved mental well-being, mental health and overall QOL. In addition, it has been associated with reduced risk of infection, hospitalisation and mortality (Participant 24).

Policy approaches

Festivals and events have been neglected in research, while they can introduce and confirm ESS and pave the way for social relationships, partnerships and well-being of people (Torres 2015). In the long run, participation in festivals and

events can have a positive impact on the drive to maintain optimal physical fitness, family ties, social relationships and the overall QOL (Jepson et al. 2019). Holding street festivals alongside natural factors such as urban rivers can also be economically viable and a pilot for UEM, and thus governments and politicians can improve their goals by generating positive economic effects on the regions (Silva et al. 2022). In this way, experts sought to achieve principles such as ESS and UEM, city identity and city liveability; according to different studies, it seems that this goal can be achieved in urban planning by holding festivals and events (Nghiem-Phú et al. 2021).

Festivals, events and, to a lesser extent, street celebrations play an important role in the prosperity of tourism in any country. The QOL of individuals has

been severely affected by the onset of COVID-19. Identifying the critical success factors for recreational tourism destinations around the Danube river can greatly contribute to the sustainable development of tourism in the regions and requires national and regional planning and policies by policymakers and governments (Participant 11).

There is a direct function between tourism development and increased QOL of residents (Băndoi et al. 2020), and it is the second most important sub-theme according to the opinions of the participants. Tourism can affect the SOP of local residents by changing the spatial components of tourism destinations (Ghorbani et al. 2021). This issue has been considered in recent years since the success of the tourism industry requires a positive perception of the host community (Tan, Tan 2020; Zhou et al. 2021).

In any country, there are two prominent factors that have a direct impact on the QOL of residents: (1) the legislative willingness or statutory

backing that is in operation for the formulation of plans and policies for the preservation and enhancement of the socio-ecological characteristics of the landscape, including the ones pertaining to tourism; and (2) the improvement in the rate of economic development that these measures are able to bring about (Firoiu et al. 2019; Goffi et al. 2019; Mousazadeh et al. 2022). It is emphasised that government support for tourism should be in line with appropriate policies and plans (UEM) to increase the QOL of local people, which are considered to be in the public advantage. These policies and their effects are reflected in the QOL of the host community and improve the QOL of the residents of tourist destinations (Cannonier, Burke 2019).

An international policymaker indicated the following:

During this cycle (i.e. during the early stages of development) there are positive changes in the QOL of destination residents. Increasing the overall level of



Fig. 7. Tourism attractions adjacent to the Danube for urban planning and policy-making (research findings).

Source: photos taken by the author.

health, recreation, services, lifestyle and life satisfaction, strengthening the SOP and reducing poverty are achieved through tourism (Participant 4).

Conclusion

The present study attempted to align ESS and UEM studies. In consonance with the efforts and arrangements of global and international organisations and commissions, in environmental studies, the contributions of related sciences should be aligned in one direction and employed in a way that readily facilitates the fulfilment of comprehensive goals and results, which is in line with the findings of this research. The SOP and QOL could represent ESS in this study, and policies and plans were considered as UEM. Maintaining and strengthening the ESS for citizens living in the immediate vicinity of the natural landscape features (such as rivers) of cities require innovative UEM that applies creativity in urban settlements to achieve socio-ecological goals, strategies and management solutions, and to lay down the basic framework for increasing the liveability of the city and improving the quality of urban life. The present study is unique and timely because, by examining the themes and sub-themes in five factors, it presents a conceptual framework to help fill the gap in ESS and UEM studies. The findings of this study revealed that COVID-19 can affect the SOP, mental and physical health and the overall QOL of citizens who were in quarantine at that time. The SOP of individuals and, by its nature, the QOL of citizens can be guaranteed by increasing the environmental awareness of citizens and creating socio-ecological security. Accordingly, it is suggested that future scientific and applied studies focus on the fields of increasing citizens' environmental awareness in order to strengthen the QOL and SOP of citizens living along the banks of urban rivers. The findings further represent that healthcare measures during quarantine, social support by the government and social institutions and, subsequently, vaccination have been able to improve the mental health of citizens during COVID-19.

The applied method for examining and providing insight into the sense of the location of people living along rivers and discovering the potential of its role in increasing the QOL can be

considered in other crises affecting urban and regional planning studies, related to the QOL and SOP. Studies of psychology and environmental health should be used as well. Efforts should be made to scientifically demonstrate the role of governments, policymakers and stakeholders in strengthening the SOP and QOL of citizens living along the banks of urban rivers through field observations and examples, and to strengthen them for future research. While this research has been conducted with specific regard to investigating the characteristics of citizens living along the bank of the Danube river, by identifying similar phenomena in other fields, future studies can ascertain the applicability of observations of a similar nature to other scenarios, in line with the goals of sustainable development. Future research could also focus on identifying and designing urban management guidelines and policies to maintain the SOP and QOL of citizens living in the vicinity of natural landscape features, such as rivers, parks and so on in times of crisis. The need for conducting psychological and environmental health research is felt more strongly than ever in urban management, especially in times of crisis; thus, future research should seek to identify strategies and scenarios for improving citizens' mental health, and in such situations, the UEM strategy is typically formulated in consideration of the capabilities and limitations of the available ESS framework. Consequently, although the presently explored segment of the literature emphasises the high value and credibility of qualitative studies in research in environmental management, urban management, psychological research and environmental health, future investigations can examine the components extracted from research that is based on quantitative studies. In conclusion, local governments need to recognise the significance of rivers as reserves to increase the SOP and QOL of urban residents.

Acknowledgements

This article was extracted from the author's doctoral dissertation, which was submitted for pre-review to the Department of Regional Science, Eötvös Loránd University, Budapest, Hungary. The researcher would like to thank the Tempus Public Foundation of Hungary for providing a grant under the Stipendium

Hungaricum Scholarship (with contract No. SHE-14127-006/2017), and those who participated in the interviews and helped in data collection.

Authors' contributions

This research is a part of the author's doctoral dissertation, and the manuscript text as well as the title of the paper have been prepared in adherence with the requirements governing the dissertation's preparation and submission. The literature review, data collection, research method, data analysis and interpretation, as well as results have been designed and carried out by the corresponding author.

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