

## FINAL REPORT

### „Geographical aspects in the migration of Hungarian health-care professionals”

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The main aim of this final report is to present the main findings of the research project. The specific objectives of the report are:

1. to formulate the research problems and questions,
2. to describe the methods used,
3. to summarise the main findings,
4. to present the policy recommendations based on the results of the research,
5. to describe the difficulties encountered during the research and how they have been overcome,
6. to outline the future directions of the research.

#### 1. Research problems and questions

The migration of health workers is a global phenomenon that is linked to the territorial dimensions of human resource shortages and inequalities in health care. Among these territorial dimensions, the centre-periphery pattern is one of the most prominent (SIYAM – DAL POZ 2014; SCHEFFLER et al. 2018). Like other post-socialist countries in Central and Eastern Europe (CEE), Hungary got involved in the international migration of health professionals only after 1990 (HÁRS Á. et al. 2016; VARGA J. 2017). In the last decade, a large number of Hungarian health workers have migrated abroad and the shortage of qualified health labour has become persistent. This process has had a negative impact on the performance of the health-care system, which has also attracted the attention of policy makers (GIRASEK E. et al. 2017; SZABÓ L. et al. 2020; GAAL P. et al. 2021). Previous data have suggested that there are also significant inequalities in the spatial distribution of health-care professionals in Hungary (GIRASEK E. 2012). However, the geographical aspects of the health-care workforce have received relatively little attention from researchers in Hungary.

In recent decades, a number of theories and models have been developed on migration in general and on the migration of health professionals in particular (see e.g. MASSEY, D. S. et al. 1993; FAIST, T. 2000; HAGEN-ZANKER, J. 2008). There have also been numerous studies summarising the factors that influence the migration of health professionals (see e.g. CASTRO-PALAGANAS et al., 2017; DAVDA et al., 2018; BRENNAN, N. et al., 2023; TOYIN-THOMAS, P. et al., 2023). However, a comprehensive theory or model of health worker migration has not yet been developed. Furthermore, relatively few studies (e.g. TANKWANCHI, A. B. S. 2012) have analysed the role of geographical factors such as place, local embeddedness, local identity in health professionals' migration decisions. In Hungary, a significant research gap is that no systematic literature review on this topic has been conducted so far, and few studies have addressed the complexity of migration decisions.

In our research, we responded to these gaps and basically sought to answer the following question. What is the role of place and space in the motivations of health professionals to migrate? In particular, we focused on the following questions.

- What are the main geographical features of health-care professionals' migration?
- What are the migration-related intentions and motives of the students who study medicine or nursing?
- How geographical places influence migration-related decisions among health-care professionals?
- What do those people think about health-care professionals' migration who do not apply for a job abroad?
- What kind of "place-based" responses exist that can be initiated to treat health-care outmigration?

After reviewing the relevant literature and identifying research gaps, we added two questions to the original ones.

- Does research on the migration of health professionals use theoretical frameworks, and if so, which ones? How can these theories be used to develop our own analytical framework?
- How are the characteristics of place and the immediate geographical environment related to other micro-factors in attitudes towards migration?

## 2. Methods

The research used a mixed methodology adapted to the research questions, but each method contributed to answering multiple research questions.

To develop the theoretical framework, we conducted a *systematic literature review* (SNYDER, H. 2019) using the Scopus bibliographic database. We examined the theoretical embeddedness of Hungarian and international research on the migration and mobility of health professionals, analysing the relevant literature. We focused on whether and which theoretical frameworks are used in these studies, and how these theories can be categorised. Scopus database was searched using the combinations of predefined search terms, and then the relevant studies were selected based on their title and abstract, leaving a total of 312 items in the sample. We applied quantitative and qualitative analysis to the sample (PÁL, V. et al. forthcoming). This was the basis for the theoretical framework we used.

For the research of macro-level processes, *we analysed statistical data*.

- To reveal the spatiality of the human resource shortage in health care, we collected official statistical data on physicians and socio-economic development indicators for the EU Member States at the smallest available geographical scale, NUTS2 level (PÁL V. et al. 2021a).
- We also used data on vacant general practitioner districts to examine spatial disparities within Hungary.
- The available data indicating the intention of Hungarian health professionals to work abroad are the certificates issued by the Hungarian authorities, which certifies in which profession and in which countries the health professionals can work. Applying for such a certificate, however, does not necessarily mean migration, only an indication of migration behaviour. Data on certificates were only available at the beginning of the research, later on it was not available due to GDPR rules.

In order to understand the social discourse on the migration of health professionals in Hungary and to assess the local policy situation of the shortage of health professionals, we performed a *content analysis* of two databases.

- To explore the social discourse, we conducted a qualitative content analysis of reports, analyses, and interviews published in the media since 2004 related to the migration of health professionals. Thus, during the research period, we developed a database containing 1107 Hungarian-language articles from 102 news portals, using a constantly expanding keyword search. The data of the media contents have been recorded in a tabular form, and each item of the database has been archived and analysed.
- For the evaluation of local policy responses, 57 development documents were initially examined, which number was expanded to 74 during the research. Most of these were local health promotion plans. For the content analysis, we used a quantitative method to search for the occurrence of "shortage" and related concepts in the text of the documents and to examine the context of the text (BOROS L. et al. 2022).

We conducted a *questionnaire survey* among medical university students. The questionnaire was administered face-to-face (voluntary, anonymous, paper-based) between March and May 2019 at the universities that approved it. The survey was conducted among students pursuing studies in medicine, dentistry, and other health professions at the University of Szeged, the University of Pécs, the University of Debrecen, and the Semmelweis University. The planned sample included third-, fourth- and fifth-year students of these four universities studying in Hungarian. The questionnaires were delivered to the students during courses where, theoretically, the entire year/class had to be present. The questions focused on possible motivations for working abroad, and the importance of geographical place, the social environment, and social contacts. A total of 670 questionnaires were completed (235 medical students, 111 dental students, 324 other health professional students). The questionnaires were recorded electronically in a tabular form and analysed using statistical methods.

We conducted *semi-structured interviews* with Hungarian health professionals in 2019 and 2020. The interviewees were doctors, dentists, and other health specialists (62 people). For some interviews, two interviewees were present at the same time, this is why there is a difference between the number of interviews and the number of interviewees. The composition of the group of interviewees by profession was as follows: 39 doctors and dentists, 23 other health professionals. Interviews were conducted in person, online, and in some cases by telephone. The pool of interviewees was purposefully expanded using a snowball method to ensure that the final group was balanced according to the types of migration-related behaviour we had previously established. These types were: previously only worked in Hungary (staying), currently working abroad (emigrated), worked in Hungary and then abroad but returned to Hungary (re-migrated), other, e.g. born and worked abroad but now working in the Hungarian health system (immigrant), career leaver.

### **3. Summary of the research results**

The main findings of the research are presented in relation to the research questions.

*Does the existing research on the migration of health professionals use theoretical frameworks, and if so, which ones? How can these be used to develop your own analytical framework?*

An important aim of our research was to develop our own theoretical framework using theories of health professional migration and the range of factors that determine the decision on migration. We found that much of the literature on the migration of health professionals is

descriptive, does not employ overt theoretical frameworks, and is strongly empirical in nature. In the studies with theoretical framework, a relatively narrow set of theories dominates (brain drain, push-pull model), but theories are applied in a variety of ways by the authors of the studies. Some studies are explicitly theoretical, while others use theory as an overarching interpretative framework, and others use theory only to interpret results (PÁL V. et al. forthcoming).

The migration theories analyzed are divided into micro, meso and macro theories according to the level of analysis. Micro-level theories consider the main drivers of migration to be the needs and intentions of individuals. Mesolevel theories consider migration from the perspective of social relations, networks and collectives. Macro-level theories, in contrast to the above two groups, focus on larger, global or national scale processes and structures (FABULA SZ. et al. 2018).

For this project, we used a micro-level model, the push-pull model (LEE, E. S. 1966), as a basis for our own analysis. This model takes into account the circumstances that influence an individual in making a decision. The push factors are related to the country of origin and encourage the individual to leave that country, while the pull factors are characteristics of the potential destination country that encourage the individual to move there. Focusing on the migration of health professionals, several studies have already collected the most important attractors and disincentives, often also grouped as micro, meso and macro factors (*Figure 1*).

In our research, we have sought a synthesising, integrating approach, combining different approaches to incorporate macro-, meso- and micro-level factors into our theoretical framework. A distinction has been made between the scale at which migration is studied (e.g. whether the focus is on structural relations or on the individual's experience of them) and the scale at which the factors that trigger migration operate (see micro-, meso- and macro-level push and pull factors). In our own model, international migration was considered as an action that takes place between a sending and a receiving country (i.e. forms of migration such as return or circular migration can also be described as a series of such movements), preceded by a migration decision by an individual or household member. The micro-level factors influencing the migration decision were considered as the basis, but also taking into account how individuals perceive different meso- or macro-level factors, further emphasising the importance of other actors (e.g. the above approach helps to understand the impact of factors on various scales on the individual migration-related decision of health professionals) (*Figure 2*).

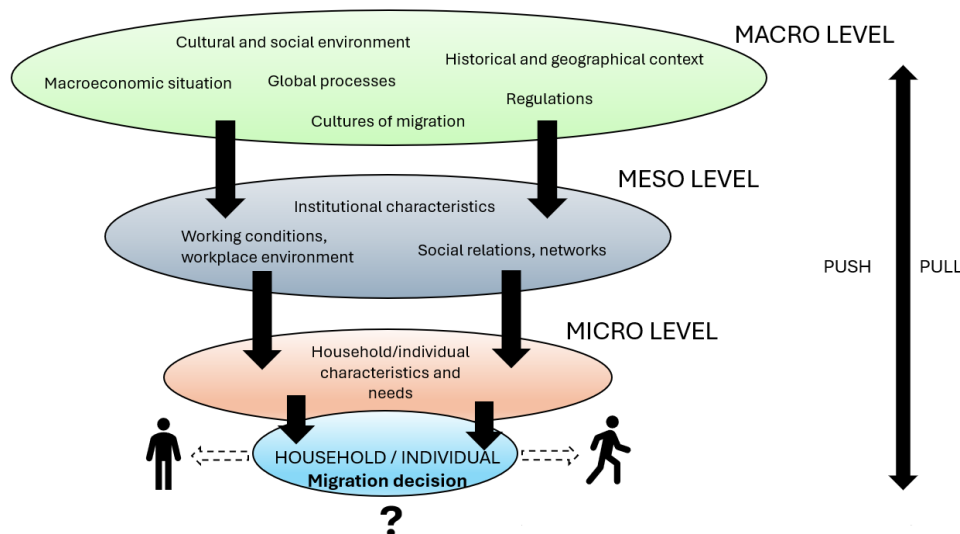


Figure 1. Multi-level system of factors influencing the migration decision (own editing)

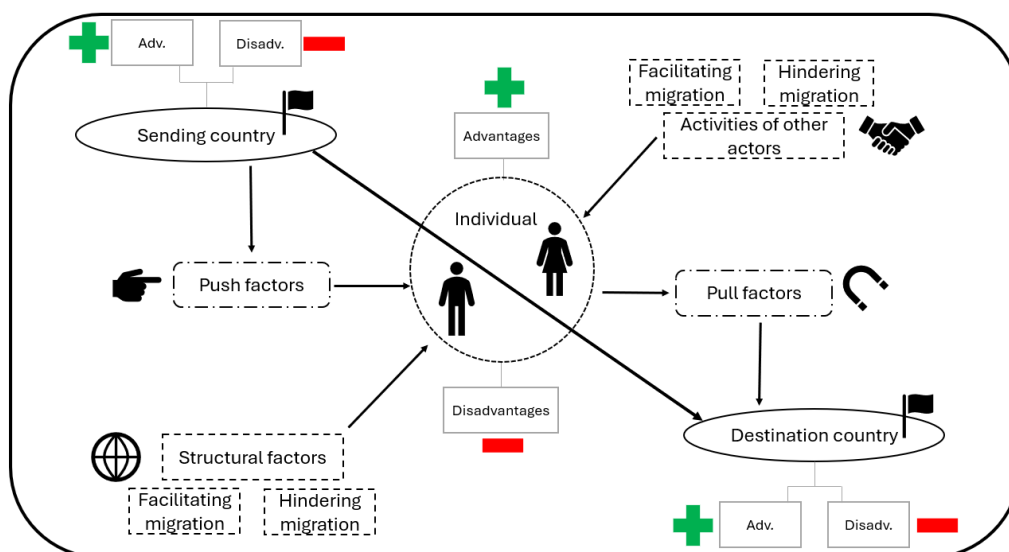


Figure 2. Migration model used in the research (own editing)

### *What are the main geographical features of health-care professionals' migration?*

For the geographical characteristics of the migration of health professionals, the main focus was on the spatial disparities in the shortage of human resources for health in the European Union and Hungary.

We examined the spatial distribution and temporal changes in the concentration of doctors in the European Union at NUTS2 level. For the European Union as a whole, the number of doctors is increasing, while their spatial concentration is also increasing. This contributes the spatial disparities in health care, as economically more developed regions tend to be better supplied with health professionals than less developed regions. In peripheral areas, where there are fewer doctors, this places a heavy burden on the population. All this suggests that the centre-periphery differences are generally becoming stronger in the EU's health-care system. Although the EU aims to achieve health equity, this ambition cannot be met if concentration increases. Thus, although health care is a national competence, a Community policy is needed to reduce inequalities (FABULA Sz. et al. 2021; PÁL V. et al. 2021a).

Hungary also shows an unequal spatial distribution of health professionals. In the spatial distribution of health professionals, the centre-periphery pattern, as defined by economic indicators and described in the international literature on several geographical scales, is only partially observed. Our results are in line with previous research showing that position in the hierarchy of municipalities has a greater impact on spatial inequalities than regional location. The statistical data analysed suggest that the concentration of health professionals at the micro-regional level increased in Hungary between 2010 and 2019 (FABULA SZ. et al. 2020a).

### *What are the migration-related intentions and motives of the students who study medicine or nursing?*

In order to predict future migration trends, it is important to explore the attitudes of health students towards migration. According to the questionnaire survey, the intention to work abroad is significant among the Hungarian health students surveyed. Almost half of the respondents (41%) indicated that they plan to work abroad after completing their studies. The questionnaire data also show that for those who plan to migrate, the intention to do so is basically strong, but this is tempered by the fact that most of them have not yet taken concrete steps. Many of them would not go abroad immediately after finishing their studies, but only later, or have not yet

decided to do so. So, with appropriate policy action, they are likely to be persuaded to stay. It can also be noted that a significant proportion of potential emigrants plan to stay abroad for a shorter period (<3 years) and only a relatively small proportion plan to leave the country permanently. However, the above results only indicate an intention to emigrate, not actual emigration, and students who seem certain to stay now could easily become emigrants if the development of the health system is not given enough attention in the future.

Among those planning to emigrate, the most preferred destinations are predominantly European, with EU countries dominating (most popular ones: Germany, UK, Austria). However, there are notable exceptions, such as Switzerland and the United States. Thus, the hypothesis that, as is the general international pattern, the primary destinations for the migration of Hungarian health professionals are global centres seems to be confirmed. Furthermore, geographical proximity is likely to have a significant impact on the choice of destination country.

Overall, the motivating factors for emigration or staying in the country are the similar to those described in the international literature. The main motives for emigration are higher wages, better working conditions and better professional opportunities abroad. In contrast, the most important factors encouraging people to stay are social contacts. However, the role of the Hungarian gratuity payment' system in influencing the intention to migrate or the importance of geographical factors (e.g. local characteristics, living environment) is a significant finding of our research (FABULA SZ. et al. 2020b).

*How geographical places influence migration-related decisions among health-care professionals?*

*How do location and the immediate geographical environment relate to other micro-factors in attitudes towards migration?*

In the interviews, geographical factors, including specificities linked to geographical locations, were found to be a significant factor in the migration decision. However, the concept of geographical location was interpreted broadly by the interviewees and local characteristics were associated with multiple scales in the interviews. Specific places appear in the interview texts: continents, countries, landscapes, municipalities, parts of municipalities (e.g. districts), streets, premises of institutions. The narratives of the interviewees also contain abstract place names: centre, periphery, countryside, village, homeland, home, workplace.

For the interviewees, centre areas are generally valued for the services and jobs available, while the lack of these resources in peripheral locations is generally a disadvantage. The geographical background from which the interviewee comes was also found to be important, as this background influences their preferences for where to live. Generally speaking, geographical factors such as attachment to place, local identity and (local) patriotism are strongly linked to personality traits and certain elements of quality of life.

It was observed that geographic and local factors do not have an impact in themselves, but are part of the micro-factors experienced by the individual, such as family, immediate work environment, personality or life stage.

Health systems studies from a human resources perspective, as well as health policy, often ignore the role of the individual's micro-environment in influencing migration decisions, and instead focus on macro-structures, analysing migration processes at the global or national level. However, through our interview research, we have also explored underlying factors and background processes of migration decision-making that are hardly possible with a large-scale statistical analysis or questionnaire survey. This revealed that micro-factors play a very strong role in migration decision-making. We have thus broadened the understanding of health professionals' thinking on migration motivations and can provide new recommendations for

decision makers (FABULA SZ. et al. 2019; LADOS G. et al. 2019; BOROS L. et al. 2021; PÁL V. et al. 2021b; PÁL V. et al. awaiting editorial decision).

*What do those people think about health-care professionals' migration who do not apply for a job abroad?*

At the start of the research, we treated health professionals who had not been involved in migration separately. However, they were only a subset of the interviewees during the interview phase. Based on their narratives, we found that micro-level factors and geographic location were more important for them than for the other groups, especially as factors for retention. They often cite family, lack of language skills, age, upbringing of children, familiarity with the place and attachment to the place as deterrents to emigration. They are less likely to cite meso- or macro-level factors. Overall, attachment to places and people and fear of change and the unknown were found to be the most significant factors.

*What kind of "place-based" responses exist that can be initiated to treat health-care outmigration?*

From the analysis of development policy documents, we have shown that the unequal spatial distribution of health professionals is considered a major problem in Hungary according to development policy documents. Policy makers see the emigration and career abandonment of Hungarian health professionals as the main cause of the problem. The documents set out a number of measures to address the shortage of health professionals.

Our results show that the role of local scale is marginal in the public discourse and the management of outmigration. In the Hungarian development documents, health-care professionals were regarded as "components" that are easy to replace, but not actors of change at all. Strategy documents and health-care development plans do not deal with space and place and do not try to utilise it. There are three interrelated reasons of this situation. The first is the centralised political structure which was strengthened in the last couple of years. The second one is also related to the centralisation as most of the local authorities have very limited resources which prevent them to actively contribute to policies aimed at dealing with outmigration. The third reason is the following: according to decision makers, the migration of physicians, nurses, midwives, and other medical workers are considered as a process driven exclusively by the higher wages in destination countries. Therefore, decision on migration is interpreted as a rational choice – which is a narrow interpretation of the process and ignores the emotional factors. As a result, local responsibilities and possibilities are also missing from the answers provided by local decision-makers.

Thus, they contribute to the predominance of national scale. Local policy makers and other actors give up the possibility to influence migration processes among health-care workers. As a consequence, there are new local health development plans since the adaptation of the ones analysed in this research. However, despite the above-mentioned factors, local authorities still have the legal basis to implement local policies to retain or re-attract health workers, e.g. through differentiated wages, financial help for settling in or starting a practice (BOROS L. ET AL. 2022).

In social discourses on health, the traditional approach is the most common; emigration is portrayed as a source of risk, with a focus on disadvantaged geographical regions and specialties with labour shortage. Geographical locations appear in media discourses in several ways; as places for opportunities and as sites of problems. However, there is an almost complete lack of understanding of the active role of localities and their role in making complex decisions about migration. The role of the state is the most prominent of the actors influencing the processes, while the perceived importance of local actors is negligible. Among the different perceptions, the most dominant is the traditional approach, which emphasises the loss of

sending areas, the resulting difficulties of supply and the spatial injustice of the processes (PÁL V. et al. 2018a; PÁL V. et al. 2018b).

#### **4. Policy recommendations**

The research has revealed several implications for policymakers.

- Future policies should consider other factors than income. Workplace cultures should be improved with attention to the local features.
- Instead of generalized solutions, a more case-sensitive system should be established that can react to certain challenges (e.g. life stages, family-related issues etc.) in a more efficient and supportive way. In this aspect, location, distance and the cycle of life all seem to be crucial.
- By using the existing knowledge networks, the good practices on retaining and re-attracting medical workforce can be adapted to local conditions.
- Place-based solutions should be promoted, e.g. strengthening place attachment, tailoring special incentives for peripheries. The more generalized and centralized initiatives can still be important, but local micro-management of workforce relations and workplace atmosphere are essential.
- Circular mobility could be supported through grants, thus re-attracting professionals.
- In order to give more appropriate policy answers, policy makers should mobilise resources on other scales besides the national one (PÁL V. et al. awaiting editorial decision).

#### **5. Difficulties encountered during the research**

Several difficulties had to be addressed during the research. The main difficulties were related to data access, GDPR rules, the COVID-19 pandemic, questionnaire data collection, and IT problems.

- Data access issues: initially, a detailed analysis of the database of health professional certificates related to employment abroad was planned. With the tightening of GDPR rules, obstacles have arisen to data collection. The problem was addressed by replacing the originally planned analysis with a statistical analysis of labour shortages in health care.
- The GDPR rules required us to develop a data management policy.
- The COVID-19 pandemic caused major disruptions in empirical research, communication, and especially interviews. To address this, we requested an extension of the project and used alternative interviewing methods.
- The project's website was attacked and its original contents had to be re-uploaded after the site was restored.

#### **6. Suggestions for further research**

The research has various directions for future development. First, the research could be continued in other countries thus making a comparative analysis possible. It would also be beneficial to conduct longitudinal research to evaluate the effects of the pandemic and governmental initiatives to the attitudes of health professionals. The changes in the spatial pattern of labour force could be also analysed. In addition, case studies focusing on aspects highlighted in this research could provide more in-depth knowledge. For example, the role of different working environments could be analysed. Last, but not least, the effects of eventual changes in policy approaches (e.g. more place-sensitive approaches) could be investigated.



The research can be extended to include interviews with policy makers and other actors who have an influence at local level. This can be hindered by the centralisation of the health system and the increased role of central decision making in its transformation.

More information about the research can be found on the project's website: <https://eszmob.hu>

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