

Foreign Employment as a Socio-Economic Challenge: Media Salience and Sentiment in Hungarian Online News

Judit T. NAGY,  PhD, Associate Professor, Department of Sociology, Károli Gáspár University of the Reformed Church, Budapest, Hungary

Eszter BALOGH (corresponding author, balogh.eszter@kre.hu),  PhD, Assistant Professor, Department of Sociology, Károli Gáspár University of the Reformed Church, Budapest, Hungary

Dorka LŐRINCZ,  MSc, University of Padua, Mobility Studies of Padua, Italy

Károly Tamás CZIRÁKI,  PhD Student, Eötvös Lóránd University, Doctoral School of Sociology, Budapest, Hungary

Zsuzsanna SZVETELSZKY,  PhD Student, Department of Sociology, Károli Gáspár University of the Reformed Church, Budapest, Hungary

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Abstract: *Foreign employment has become one of the most visible socio-economic challenges in Central and Eastern Europe, as labour mobility increasingly reflects wage disparities, unequal life chances, labour-market tensions and perceived insecurity about the future. However, the socio-economic challenges associated with foreign employment have rarely been examined through large-scale longitudinal media data capable of measuring both agenda salience and sentiment dynamics over more than two decades. This study aims to identify how the media visibility and emotional framing of Hungarians' foreign employment evolved between 2000 and 2021 and to interpret this discourse as an indicator of broader socio-economic challenges. The empirical analysis is based on a Hungarian online news corpus of 7,355,292 articles from 22 mainstream portals, from which 1,555 relevant articles were selected through a two-stage keyword-filtering procedure using the simultaneous occurrence of "Hungarian", "work" and "abroad", followed by a 2% thematic-keyword threshold. The methodology combines agenda-setting analysis, longitudinal time-series comparison, corpus linguistics, tokenisation, lemmatisation and dictionary-based sentiment analysis using the SentimentAnalysisHUN lexicon, which enabled the classification of more than 1.5 million tokens into positive, negative and neutral polarity groups. The results show a clearly cyclical and event-driven pattern of media salience: the topic reached its lowest point in 2007, increased after the 2011 opening of the Austrian and German labour markets, and peaked in 2016 during the politicisation of migration discourse. Sentiment analysis demonstrated that neutral lexical units dominated the corpus, averaging 93.6% of all tokens, which confirms the objectivity-oriented nature of hard news reporting while making relative shifts in the positive-negative sentiment gap analytically meaningful. The strongest emotional fluctuations coincided with the 2008 global financial crisis, the 2011 labour-market liberalisation and the 2015–2016 migration crisis, when working abroad shifted from an opportunity-oriented narrative towards a discourse of labour-market insecurity, wage inequality, blocked social mobility and dissatisfaction with domestic institutions. The analysis further shows that higher article frequency was often accompanied by stronger sentiment volatility, although the relationship was context-dependent rather than linear, proving that media visibility alone cannot explain the changing social meaning of labour mobility. The study contributes to migration studies, media studies and economic sociology by demonstrating that longitudinal press-corpus analysis can uncover socio-economic challenges that remain only partly visible in conventional employment statistics, while offering a replicable statistical framework for examining the interaction between media attention, sentiment dynamics and structural change in semi-peripheral European economies.*

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INTRODUCTION

Working abroad has become a significant socioeconomic challenge in Hungary, as well as in Central and Eastern Europe. Although cross-border labour mobility can create opportunities for higher income, professional development, and personal life mobility, it also reflects persistent structural inequalities between sending and receiving countries ([Kahanec et al., 2010](#); [Hárs, 2016](#)). Differences in wages, job security, career opportunities, housing conditions, social benefits, and the quality of public services influence whether those affected perceive labour mobility as an opportunity, a temporary strategy, or a necessary response to limited domestic life prospects. In this sense, working abroad cannot be reduced to a mere individual employment decision but is also linked to broader issues of social mobility, demographic sustainability, labour shortages, family separation, public dissatisfaction, and expectations regarding the future ([de Haas, 2021](#); [Cancedda et al., 2015](#)).

This perspective is particularly relevant in semi-peripheral European economies, where improvements in employment indicators can coexist with persistent inequalities in income, regional opportunities, and access to predictable, high-quality public services. Factors contributing to the growing willingness of Hungarians to work abroad include domestic wages that are lower than those in Western Europe, limited career opportunities, labour shortages in certain sectors, and dissatisfaction with the functioning of domestic institutions and public services ([Hárs, 2016](#); [OECD, 2019](#)). Labour mobility therefore serves as a sensitive indicator of how individuals assess the ability of the domestic economy and social institutions to provide secure and credible life prospects. This may indicate not only the attractiveness of foreign labour markets but also the perceived limitations of the structure of domestic opportunities ([OECD, 2019](#); [de Haas, 2021](#)).

Working abroad therefore touches on numerous issues in the sociology of the economy, as it is linked to several central dimensions of socioeconomic change. Migration is linked to labour market transformation, income inequality, unequal life chances, demographic pressure, social cohesion, and

the relationship between individual mobility strategies and institutional performance ([Castles, de Haas, & Miller, 2020](#); [de Haas, 2021](#); [Kahanec et al., 2010](#)). The departure of workers—particularly young people and highly educated groups—can affect the labour supply, the sustainability of public services, intergenerational relations, regional development, and the societal perception of whether upward mobility remains accessible within the country ([Beine et al., 2008](#); [OECD, 2013](#)). This broader perspective makes it possible to interpret mobility not merely as cross-border movement, but also as a response to structurally unequal economic and social conditions. ([de Haas, 2021](#)).

The discourse in online media serves as a useful source for examining these processes, as it not only documents the occurrence of working abroad as a social phenomenon but also its changing social significance and interpretation. The rhetorical strategies and discourses employed in the media are closely linked to global political and social events, thus forming a dynamic system that continuously reproduces the frameworks of public opinion ([Firdaus, 2004](#); [Kosho, 2016](#)). According to agenda-setting theory, the media greatly influences which issues people perceive as important, even if it does not directly tell them what to think about them ([Firdaus, 2004](#)). Research on framing, meanwhile, indicates that the media also plays a role in the interpretation of these social problems. ([McCombs & Shaw, 1972](#); [Entman, 1993](#)).

At the same time, media coverage should not be treated as a direct indicator of the actual volume of migration or of objective economic conditions. Rather, they indicate when a phenomenon becomes publicly visible, politically contested, and emotionally significant ([McCombs & Shaw, 1972](#)). In this regard, longitudinal media analysis can complement traditional labour market and demographic indicators. While employment rates, wage data, or migration statistics describe structural trends, media discourse reveals how these trends are transformed into concerns, collective narratives, and assessments of social reality.

The significance of media discourse is particularly evident during periods of economic uncertainty and political debate. Crises, labour market liberalization,

tensions in the public sphere, and political campaigns related to migration can alter not only patterns of mobility but also the language through which working abroad is interpreted ([Entman, 1993](#); [Hárs, 2016](#); [Bocskor, 2018](#)).

An issue may come into the spotlight when people feel uncertain, are dissatisfied with the functioning of domestic institutions, see few opportunities for advancement, or fear the weakening of the national community ([Entman, 1993](#); [Bernáth & Messing, 2015](#); [Bocskor, 2018](#)). Changes in the emphasis and tone of media coverage therefore provide insight into the shifting social significance of labour mobility. In the case of working abroad, media discourse can link individual migration decisions to broader narratives concerning wages, institutional performance, demographic decline, family life, national identity, and future prospects. Therefore, from an analytical perspective, it is not only important to measure how frequently working abroad appears in the media, but also to examine how its emotional and evaluative framing changes over time. In discourses on migration, narratives appearing in the media are extremely sensitive to international events and can trigger rapid changes in terminology and interpretation ([Wildemann, 2023](#)).

This study examines Hungarian online media discourse on working abroad between 2000 and 2021 using a large-scale, longitudinal press corpus. It analyzes both the topic's particular significance and its emotional dynamics in order to identify how working abroad was linked to the changing socio-economic challenges facing Hungarian society. By combining agenda-setting analysis, corpus linguistics, and dictionary-based sentiment analysis, the study offers a replicable framework for analyzing the interaction between media attention, emotional framing, and structural change. Its contribution lies in demonstrating how discourse in online media can make visible the socioeconomic tensions that are only partially observable in traditional employment, wage, and migration statistics.

LITERATURE REVIEW

Migration has become one of the European Union's key political and social issues in recent decades. Accordingly, in the Central and Eastern

European press, emigration is not only portrayed as an economic or demographic phenomenon but is also frequently linked to issues concerning the country's future, the state of the national community, and social stability ([Trandafoiu, 2022](#)). The Eastern European media therefore often discusses emigration not merely as mobility data, but in conjunction with broader issues such as national loss, the diaspora, the situation of families, and return migration ([Trandafoiu, 2022](#); [Bajomi-Lázár, 2018](#)).

In the Eastern European press, emigration appears within three dominant interpretive frameworks. On the one hand, it is linked to labor shortages, wage disparities, and the so-called "brain drain" phenomenon as an economic problem ([Hárs, 2016](#)).

On the other hand, it is portrayed as a demographic crisis, primarily in the context of population decline and aging ([Sandu, 2017](#)). Third, it is also interpreted as a social and identity challenge, drawing attention to the dramatic life stories of migrants, the barriers to integration in host countries, and the maintenance of transnational social ties ([Anghel, 2013](#)).

According to research, the media not only interprets migration but can also have a significant impact on the formation of public opinion ([Eberl et al., 2018](#)). While migration discourses in Western European host countries are often dominated by concerns regarding welfare systems, in Central and Eastern European source countries, demographic losses resulting from emigration and the political instrumentalization of the refugee crisis play a greater role ([Eberl et al., 2019](#); [Bajomi-Lázár, 2018](#)). In the region, emigration therefore often functions as a counter-narrative: it competes with discourses on immigration or reshapes their interpretive frameworks.

Due to the close intertwining of the media and politics, mobility is interpreted differently in each country. In Poland, in the years following EU accession in 2004, the discourse on migration was fundamentally optimistic and opportunity-oriented. It was interpreted as a gateway to European mobility for younger generations ([Dzieglewski, 2015](#)). The "American Dream" model (in which hard work leads to a successful career abroad) appeared

in popular culture and media programs (such as the series 'Londyńczycy') ([Dzieglewski, 2015](#)). Over time, however, the emphasis shifted toward negative macro-level consequences. A "moral panic" emerged in Polish public discourse regarding issues such as the breakdown of families or the phenomenon of the "Euro-orphanage" ([Dzieglewski, 2015](#)).

Academic and media analyses also began to examine the phenomenon of "brain waste," pointing out that highly educated Polish graduates often work in low-prestige jobs in Western Europe, which can lead to double marginalization upon their return home ([Dzieglewski, 2015](#)).

The case of Bulgaria is a good example of the contradictions in these discourses. [Krasteva & Koleva \(2021\)](#) point out that while the country is in fact suffering from mass emigration and a brain drain, the media and politicians employ moral panic and "security" rhetoric against refugees. This discourse reinforces the protection of national identity while obscuring the real demographic crisis and the structural causes of transit migration ([Krasteva & Koleva, 2021](#)).

In Hungary, government communications have made immigration the central issue, while pushing the issue of emigration into the background ([Bajomi-Lázár, 2018](#)). Hungary is a unique case in Europe in terms of the visibility of migration in the media. During the 2015 refugee crisis, the proportion of migration-related news in the Hungarian press rose to an unprecedented level. In the second half of 2015, 72% of all news stories were related to migration ([Eberl et al., 2019](#)).

This exceptionally high proportion was directly linked to government communication campaigns that portrayed refugees as "illegal economic migrants" ([Eberl et al., 2019](#)). The main characteristic of the Hungarian media discourse was the absolute dominance of the security framework ([Eberl et al., 2019](#)).

At the same time, the discourse on Hungarian emigration was pushed into the background; indeed, anti-refugee rhetoric had a negative "spillover" effect on the image of European freedom of movement, which had previously been relatively positive in the Hungarian press ([Eberl et al., 2019](#)).

Furthermore, press reports on emigration often portray Hungarian migration as a difficult family decision driven by dissatisfaction with institutions, concerns about children's future prospects, as well as professional sacrifice or downward social mobility ([Sashegyi, 2023](#)).

In addition, in the Hungarian press, emigration is often presented within the broader context of employment within the EU, in which moving abroad is interpreted, on the one hand, as a new opportunity and, on the other, as a forced decision stemming from domestic circumstances.

Overall, the portrayal of migration in the media is a dynamic, highly context-dependent, and politically sensitive area of communication. To our knowledge there is no large-scale study that analyzes, over a longer time span, how the significance and emotional portrayal of migration in the press have changed in the Hungarian online media.

In the Hungarian context research on media discourse have primarily examined immigration, the 2015 refugee crisis, and the political framing of migration ([Bernáth & Messing, 2015](#); [Bocskor, 2018](#); [Farkas, 2022](#)), while studies on emigration and Hungarians working abroad has focused mainly on demographic change, labour-market processes, and the socio-economic consequences of outward migration ([Huesby-Darvas, 2012](#); [Hárs, 2016](#); [Bodnár & Szabó, 2014](#)). Therefore, relatively little attention has been paid to how Hungarians' foreign employment has itself been constructed and interpreted in the news media over time.

Similarly, outside the Hungarian framework longitudinal media studies have primarily examined immigration and refugee-related discourse in receiving countries ([Vliegenthart & Boomgaarden, 2007](#); [Boomgaarden & Vliegenthart, 2009](#); [Blinder & Allen, 2016](#)).

Comparative research by [Eberl et al. \(2019\)](#) represents an important exception, as it incorporates emigration and intra-EU mobility into the analysis of migration media discourse. However, the Hungarian case is examined only as one component of this comparative framework, using eight Hungarian news outlets covering the period 2013–2017, rather than as a dedicated longitudinal analysis of Hungarians' foreign employment.

The present study addresses this gap by examining the evolution of media discourse on migration over time using a large-scale online press corpus spanning several years (2000-2021). The research focuses in particular on the economic and sociopolitical phenomena that influence the topic's presence on the agenda and the dictionary-based sentiment dynamics of the articles, thereby linking media discourse with the broader socio-economic context of labour mobility.

METHODOLOGY

The study explored discourse on working abroad in the Hungarian online press between 2000 and 2021, with particular attention to changes over time, dominant narratives, and differences among news portals. The research is based on the following two research questions:

1. How did the number of articles (coverage) related to working abroad change in the Hungarian online press between 2000 and 2021, and what correlation can be identified between the intensity of the topic and Hungarian socio-economic processes and political-economic milestones?
2. How did the sentiment of articles related to working abroad (the ratio of positive, negative, and neutral words) evolve during the period under review, and what emotional fluctuations can be observed in relation to key political-economic events (e.g., EU accession, the 2008 crisis, the opening of the labour market, the 2015 migration crisis)?

The so-called "ELTE.DH pilot corpus (news)" was used to examine discourse on employment abroad in the Hungarian online press ([Indig et al., 2020](#)). The period preceding Hungary's 2004 accession to the European Union was included because it covered the preparatory phase for accession. At the same time, sampling was determined by the nature of the database, as data after 2021 were incomplete. The study is based on a large corpus of 7,355,292 articles collected through targeted web crawling from 22 mainstream Hungarian news portals. Keyword filtering identified 1,555 articles relevant to employment abroad. Portals with different technological and web-architecture solutions were

included. The articles were collected using targeted web crawling. The collection was carried out using a two-level crawler method: first, article links were collected from the sites' archive or list views, and then the HyperText Markup Language (HTML) content of each article page was downloaded separately. By building on the portals' own archives, this method enabled the systematic collection of all publicly available articles from the selected pages without duplication.

Articles on Hungarians working abroad were selected from the database of 7,355,292 articles through a two-step keyword-filtering procedure. The keyword lists were determined by the researchers.

In the first step, articles containing the keywords "Hungarian," "work," and "abroad" were selected, yielding 22,186 articles. In the second step, a broader keyword list (see Appendix 1) was applied to exclude potentially irrelevant articles. Articles were retained when at least 2% of their non-repeated words matched terms from the keyword list. The selection of the 2% threshold was a compromise between comprehensiveness and relevance. Several percentage thresholds were tested, and the resulting article counts and content were checked through random sampling. The results are shown in the table 1 below.

Based on the threshold comparison, the 2% threshold represented the optimal balance between corpus size and topical relevance. To validate the threshold, 20 randomly selected articles from each tested threshold level were independently reviewed by two researchers. Articles were considered relevant only if employment abroad was the main topic of the article, a substantial portion of the text focused on the topic, and employment abroad was not merely mentioned in passing.

The researchers achieved complete agreement in their assessments (100% inter-rater agreement). The 2% threshold retained a sufficient number of articles (1,555) for reliable analysis while minimizing the inclusion of irrelevant content. Lower thresholds resulted in a higher proportion of irrelevant articles, whereas higher thresholds substantially reduced the corpus size and increased the risk of information loss.

Table 1. Results of Keyword Filtering at Different Thresholds

Weak keyword filtering threshold	Number of articles
0.5%	8,218
1.0%	4,347
1.5%	2,536
2.0%	1,555
2.5%	960
3.0%	636
3.5%	401
4.0%	267
4.5%	198
5.0%	145

Source: Authors' own compilation based on keyword filtering of the ELTE.DH Pilot Corpus ([Indig et al., 2020](#)).

Note: The table reports the number of articles retained at different keyword-filtering thresholds. Articles were selected using a two-step keyword-filtering procedure after tokenisation, lemmatisation, and stop-word removal. Corpus processing was performed using the Python Stanza package; calculations and tabulation were carried out in Microsoft Excel.

Before the second filtering step, the entire text corpus underwent linguistic preprocessing: the texts were tokenised, the tokens were lemmatised (converted to their dictionary forms), and stop words (the most frequent elements with no informational content) were removed. This step ensured that the analysis focused exclusively on lexical units relevant to the content. Following the filtering process, the final corpus comprised 1,555 relevant articles from 22 different mainstream Hungarian news portals. To examine the topic's salience, the number of articles in the filtered corpus was counted for each year and plotted over time (see Figure 1). This approach made it possible to track changes in the topic's frequency of appearance over the period under study.

Sentiment analysis was performed using a lexicon-based method ([Sebők et al., 2021](#)), which scales well for large corpora, is transparent, and does not require manually annotated training data. Individual tokens were classified as positive, negative, or neutral using a publicly available Hungarian sentiment lexicon (for dictionary-based sentiment analysis, used SentimentAnalysisHUN, a publicly available Hungarian-language sentiment analysis tool: [Dhuszti, n.d.](#)).

The dictionary consists of two main files (PrecoPos.txt and PrecoNeg.txt), which contain lexical items with positive and negative polarity, respectively; tokens not included in the dictionary were classified as neutral. The categorisation was performed at the word level: a single polarity value was assigned to each lemmatised token, regardless of context (a bag-of-words approach). This method is suitable for identifying macro-level, temporal trends, although it does not account for sentence-level nuances or irony.

The numbers of positive and negative words were compared with the total number of tokens in each year to calculate annual percentage ratios. The proportion of neutral words was calculated by subtracting the positive and negative ratios from 100% of the total tokens. The analysis was conducted annually to visualise the emotional dynamics (changes in positive/negative/neutral ratios) for the period between 2000 and 2021 in a time-series format (see Figure 2). The indicators were examined separately for the entire corpus.

This dictionary-based approach enabled efficient processing of more than 1.5 million tokens across 1,555 articles, while the method's objectivity and reproducibility are ensured by the publicly available dictionary. The interpretation of the results took into account that objectivity, factuality, and balance are among the defining expectations of professional news journalism ([Tuchman, 1972](#); [Schudson, 2001](#)).

In hard news texts, therefore, authorial evaluation and explicit emotional stance are typically more restrained, while event-centred, informative language use dominates ([Thomson et al., 2008](#); [Reinemann et al., 2012](#); [van Dijk, 1988](#)).

Consequently, the high proportion of neutral lexical items in the present corpus can be considered a methodologically expected result; from an interpretive perspective, therefore, it is not the dominance of the neutral category in and of itself, but rather the difference in the ratio of positive and negative words, as well as its temporal variation, that holds explanatory power. Indeed, sentiment in news articles often appears less explicitly than, for example, in opinion pieces or social media posts; therefore, emotional dynamics can primarily be captured through relative shifts ([Hamborg et al., 2021](#)). Corpus processing and sentiment analysis were conducted using the Python Stanza

package, while data visualization and figure preparation were performed in Microsoft Excel.

RESULTS

The Salience of the Topic and its Socio-economic Context. Before examining the media discourse on

working abroad, it is appropriate to analyse the topic's salience, as the temporal evolution of the number of relevant articles clearly indicates when the topic became more prominent in the Hungarian online press. The annual number of articles related to working abroad is presented in Figure 1.

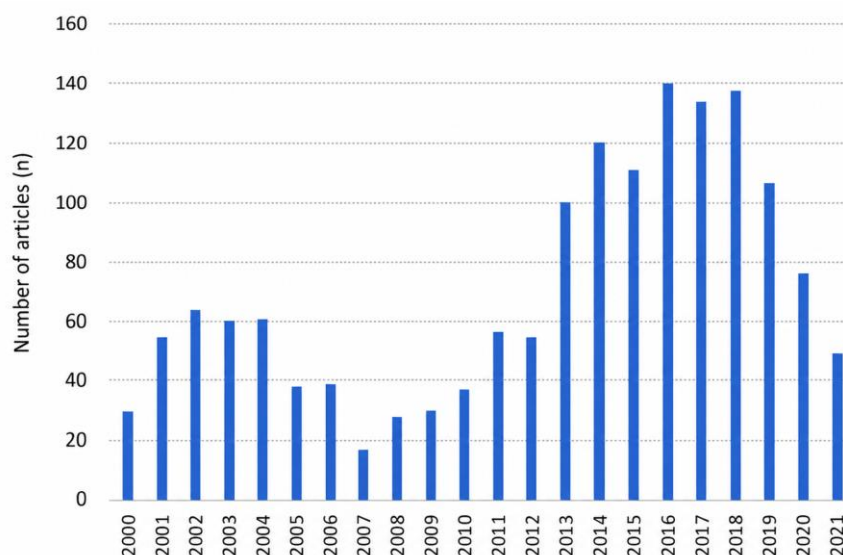


Figure 1. Annual Number of Articles related To Working Abroad In the Analysed Corpus (2000–2021)

Source: Authors' own compilation using Python Stanza and Microsoft Excel.

The chart shows that the discourse on working abroad and migration has not been continuous over the past two decades. Following moderate interest in the early 2000s, the topic reached its lowest point in 2007. Subsequently (in parallel with the opening of the Austrian and German labour markets in 2011 ([Holland et al., 2011](#))) the intensity began to rise gradually, reaching its absolute peak in 2016 during the period under review.

This sharp increase shows a close correlation with the domestic public discourse on migration. While the “European refugee influx” was at the centre of public discourse in 2015–2016, the Hungarian online press simultaneously presented the emigration of Hungarians abroad in a manner that can be interpreted as a form of counter-narrative. This linked the issue of mobility more closely to domestic political and social processes. The downward trend between 2019 and 2021 can be explained in part by the mobility-restricting effects of the COVID-19 pandemic and in part by media fatigue on the topic ([OECD, 2021](#)). The migration discourse is not merely

descriptive but functions as a socially structured field of interpretation, where media framing and political communication determine which social phenomena are emphasised ([Entman, 1993](#); [McCombs & Shaw, 1972](#)).

The significant increase in the number of articles after 2013 can be linked to several socio-economic processes. On the one hand, this coincides with mounting tensions in public education: between 2011 and 2018, there were several waves of nationwide teacher protests, which intensified particularly in 2016 ([Index, 2016](#); [HVG, 2016](#)). Although no comprehensive annual resignation statistics are available, labour market pressures are clearly evident through the rise in unfilled positions and recruitment challenges. Public spending on education as a percentage of GDP (gross domestic product) in Hungary fell from 4.6% to 3.9% between 2010 and 2013, then recovered only partially, with no sustained increase in 2017–2018 ([European Commission/EACEA/Eurydice, n.d.](#)). Although a similar, slightly declining trend was also observed in

the EU average. At the same time, negative developments in education may have contributed to media coverage of Hungarian migration. On the other hand, the Hungarian labour market improved significantly during the period under review: the employment rate for those aged 15–64 rose from 54.9% in 2010 to 69.2% in 2018, while the unemployment rate fell from 11.3% to 3.7% ([Központi Statisztikai Hivatal, 2019](#)). The improvement affected nearly all demographic groups, particularly those aged 55–64. At the same time, according to much of the literature, this improvement is only superficial ([Központi Statisztikai Hivatal, 2019](#)).

Public employment programs constituted a distinct, secondary segment of the Hungarian labour market: they represented state-funded, mostly low-value-added job opportunities aimed primarily at employing the long-term unemployed. In the short term, the programs improved employment statistics and reduced registered unemployment, but this provided a partially misleading picture of the state of the labour market, as public works participants were counted as employed in the statistics, while the programs only provided limited support for a lasting return to the primary, market-based labour market ([Köllő, J., & Scharle, Á. \(2012\); Köllő, 2015; OECD, 2014](#)). Therefore, the improvements in employment and unemployment indicators in the 2010s must be interpreted with caution, as they did not solely reflect a strengthening of the private sector's job-creation capacity. The transformation of the Hungarian labour market, resulting from post-socialist economic restructuring, European integration, and internal labour market tensions, has created new patterns of mobility, particularly among younger and more educated workers ([Blaskó & Gődri, 2016](#)). In this context, working abroad can be interpreted not only as an opportunity for higher wages but also as an individual adaptation strategy in response to uncertainties in the domestic labour market.

In contrast, a more favourable trend is evident in wage developments. Between 2013 and 2018, the average gross wage in Hungary rose nominally from approximately 231,000 forints to nearly 330,000 forints, while real wages also grew steadily ([Központi Statisztikai Hivatal, 2014, 2019](#)).

Similar wage dynamics were observed in the European Union as well, particularly in the second half of the period. This suggests that, alongside nominal wage growth, the rise in real incomes also reflected the partial results of economic convergence. At the same time, structural differences between wages and labour market conditions in Hungary and Western Europe remained significant ([European Commission, 2023](#)). This is particularly important because one of the fundamental drivers of international migration is precisely the variation in wage levels, livelihood opportunities, and labour market conditions across countries, as emphasized by the push–pull theory ([Todaro, 1969](#)).

Overall, the data suggest that the prominence of foreign employment in the Hungarian online press between 2000 and 2021 did not develop uniformly but was linked to specific events and socio-economic turning points: it reached a low point in 2007, then gradually increased following the opening of the labour market in 2011, and peaked in 2016. The intensity of media coverage on this topic was linked not only to economic crises, the opening of the labour market, and actual mobility trends, but also to domestic labour market uncertainties, wage disparities, and public dissatisfaction with the state of education and healthcare. These areas are important prerequisites for long-term life security and social mobility; therefore, working abroad was interpreted in the press not merely as an economic decision but also as a search for more predictable living conditions ([Becker, 1964; Esping-Andersen, 1990; Massey et al., 1993](#)).

The politicisation of public discourse on migration in 2015–2016 further reinforced this process, as Hungarians working abroad increasingly appeared as a counterpoint to and indicator of domestic social problems. As a result, media representations of working abroad gradually moved beyond the narrow confines of the labour market and became an important indicator of Hungarian society's problems with quality of life, mobility, and future prospects.

The Emotional Dynamics of the Discourse on Working Abroad

To answer the second research question, dictionary-based sentiment analysis was conducted on a corpus of 1,555 articles. Annual ratios of positive and

negative words to the total number of tokens were calculated and plotted as time series together with the ratio of neutral words. In addition, a Sentiment Gap Index (SGI) was calculated for each year as the ratio of the proportion of positive words to the proportion of

negative words ($SGI = \text{Positive \%} / \text{Negative \%}$). Higher SGI values indicate a more favourable emotional framing of working abroad, whereas lower values indicate a narrowing gap between positive and negative sentiment. The results are shown in Figures 2 and 3.

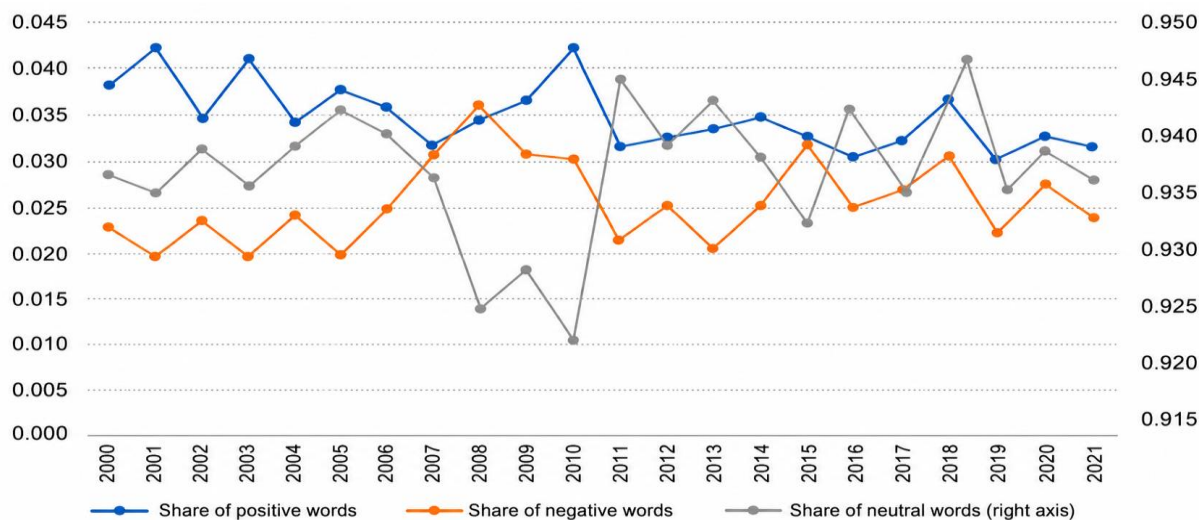


Figure 2. Trends In the Ratio of Positive, Negative, and Neutral Words In Articles Related to Working Abroad (2000–2021)

Source: Authors' own compilation using Python Stanza and Microsoft Excel.

Note: Left axis – ratio of positive and negative words; right axis – ratio of neutral words.

Figure 2 illustrates the emotional dynamics of online press coverage related to working abroad between 2000 and 2021. Based on the results, the emotional intensity of the discourse was not consistent. The proportions of positive, negative, and neutral elements fluctuated, coinciding with several major turning points in Hungarian society and the economy. In the analysed corpus, neutral expressions consistently predominated, accounting for an average of 93.6% of tokens. This is consistent with the expectations of objectivity, factuality, and balance in news-focused online media (Tuchman, 1972; Schudson, 2001; Thomson et al., 2008). At the same time, the framing of migration narratives in the media cannot be considered a neutral process, as framing determines the interpretive framework through which a social phenomenon becomes visible (Entman, 1993). Therefore, from a research perspective, it is not the dominance of the neutral category in and of itself, but rather the difference between positive and negative ratios—that is, the sentiment gap—and its change over time that holds explanatory power. Figure 3 presents the annual

Sentiment Gap Index. The SGI provides a more direct measure of emotional framing than the separate positive and negative series because it captures the balance between the two sentiment categories. Higher values indicate a more positive representation of working abroad, whereas values approaching 1 indicate a more balanced or ambivalent discourse.

Among emotionally charged elements, positive expressions generally outnumbered negative ones, though during certain periods, negative sentiment came remarkably close to positive values. A slight but noticeable decline in the proportion of neutral words is particularly evident during the 2008 economic crisis and in the period after 2015. This may suggest that during these years, working abroad became less and less a purely economic or administrative issue and increasingly a subject of value-based, political, and identity-related debates. The dynamics of the emotional spectrum thus signal several significant social and political changes, even though neutral lexical elements remained dominant in the overall linguistic corpus of the news texts.

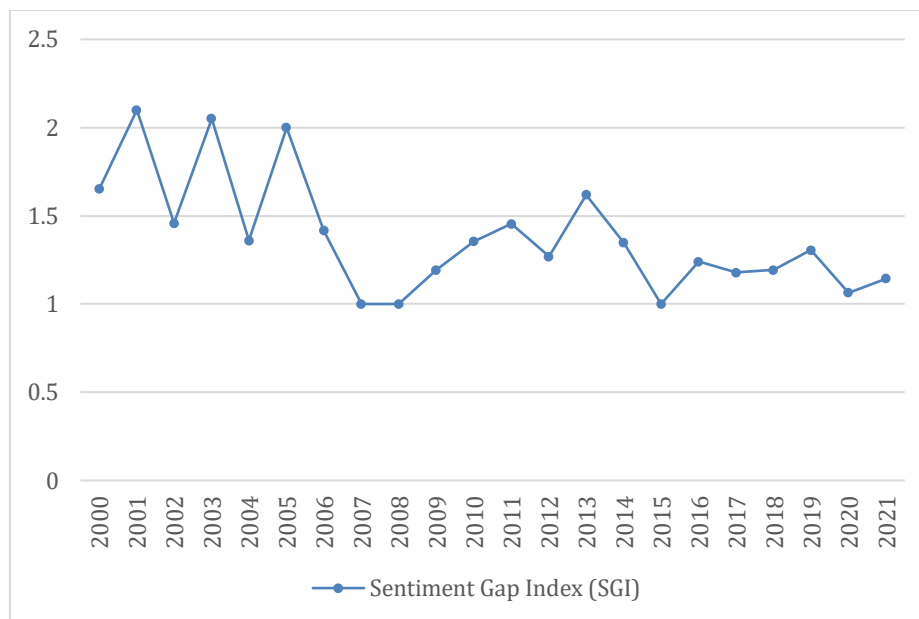


Figure 3. Annual Sentiment Gap Index in articles related to working abroad (2000–2021)

Source: Authors' own compilation using Python Stanza and Microsoft Excel.

Note: SGI = Positive word ratio / Negative word ratio.

Several key periods emerged during the analysis. During the EU accession period, between 2000 and 2004, high positive sentiment and relatively low negative sentiment were characteristic. During this period, working abroad was still primarily portrayed as a desirable goal and a symbol of European integration; the press's optimistic tone was dominated by the promise of a "Europe without borders," job opportunities in the West, higher wages, and a better quality of life. Between 2000 and 2004, EU accession was linked in the Hungarian public discourse to a strongly future-oriented narrative of modernisation and catching up. Support for accession is evident in the 2003 referendum, where an overwhelming majority of voters supported Hungary's EU membership, reinforcing the interpretation of integration as a positive, historic opportunity in public discourse (Batory, 2002; Göncz & Lengyel, 2021). Within this framework, working abroad was not primarily viewed as a loss or a compulsion, but rather as part of freedom, mobility, and access to the European living space. According to the literature on East–West labour mobility, the 2004 enlargement was associated simultaneously with economic hopes, expectations of catching up, and the promise of expanded individual life strategies (Favell,

2008; Kahanec et al., 2010). This may explain why, in the press discourse of that period, working abroad was framed in a more positive emotional context than during the subsequent narratives of crisis and loss.

The 2008 global economic crisis marked the most dramatic turning point. During this period, the proportion of neutral words dropped significantly, reaching its lowest point around 2010, while the proportions of both negative and positive words surged. This suggests that the topic became truly emotionally charged and a matter of direct social concern at that time. The rise in negative sentiment likely reflected forced emigration, the foreign currency loan crisis, and high domestic unemployment (Verner & Gyöngyösi, 2020). The foreign currency loan crisis, unemployment, and forced migration can be interpreted as mutually reinforcing structural factors in post-socialist economies that increase migration pressure (Bohle & Greskovits, 2012; Greskovits, 2015). According to Bodnár and Szabó (2014), the growth in the number of people working abroad accelerated noticeably in Hungary after 2008, particularly among younger age groups and in certain sectors, such as construction and hospitality. This indicates that in the post-crisis period, working abroad came to be seen less and less

as a purely individual career strategy and increasingly as a form of adaptation to the domestic labour market. Interestingly, the peak in positive terms in 2010 may have reinforced hopes associated with the change of government or the narrative of “Hungarians working successfully abroad” in certain media outlets. In the post-2010 Hungarian political landscape, the two-thirds government majority exerted a significant influence on the shaping of public policy discourses, including the framing of migration, which thus appeared in the public sphere within a strongly political framework ([Buzogány & Varga, 2018](#)). The SGI confirms this interpretation. After relatively high values during the early 2000s, the index fell sharply and reached approximately 1.0 in 2007 and 2008, indicating that positive and negative sentiment were present in nearly equal proportions. This period marked the weakest positive framing of working abroad in the entire time series.

The opening of the German and Austrian labour markets in 2011 can be interpreted as another turning point. At that time, Germany and Austria lifted transitional restrictions on workers from the Central and Eastern European member states that had joined in 2004, thereby providing Hungarian workers with more direct access to the labour markets of these two key destination countries ([European Commission, 2011](#)). The accelerating growth of Hungarian emigration after 2008, followed by the strengthening of mobility channels after 2011, suggests that working abroad increasingly emerged as a practical life strategy rather than an exceptional or extraordinary decision ([Bodnár & Szabó, 2014](#); [Hárs, 2016](#)). Easier access to the German and Austrian labour markets has made working abroad a more institutionalised, predictable, and everyday form of mobility. This may explain why, during this period, the emotional intensity of the topic in press discourse may have diminished, while administrative, informational, and labour market-oriented approaches gained prominence. At the same time, this should not be interpreted as a general depoliticisation, but rather as a temporary normalisation, since working abroad later became more strongly linked again to social loss, labour shortages, and political framing.

In the period after 2011, working abroad gradually became an everyday social experience in the Hungarian public sphere. It functioned not only as an economic opportunity but also as a point of comparison regarding domestic wages, public services, quality of life, and social mobility. At the same time, while the expansion of public employment in domestic employment policy improved employment indicators, international assessments suggest it provided only limited support for a return to the open labour market ([OECD, 2014](#)). This may have contributed to the fact that, in the media discourse on working abroad, layers of meaning related to coercion, hopelessness, and social discontent began to feature more prominently alongside economic rationality.

The 2015 migration crisis brought another shift. The proportion of negative terms once again approached that of positive ones. This year, the concept of “migration” underwent a significant transformation in public discourse, and news portals increasingly drew parallels or even contrasts between Hungarian emigrants and arriving refugees, which may have contributed to a more generally negative discourse. The transformation of the concept of migration in public discourse results from the interaction between political and media discourse, which creates meaning frames that change over time ([Entman, 1993](#); [van Dijk, 1997](#)). The 2015 migration crisis can also be considered a turning point because “migration” became a highly politicised and securitised category in public discourse. Hungarian government communication framed immigration as an economic and security threat, while frequently linking refugees, economic migrants, and reports related to terrorism ([Bocskor, 2018](#)). [Bernáth and Messing \(2015\)](#) also point out that in 2015, interpretive frameworks quickly emerged that have permanently shaped public discourse on migration. In this context, news about Hungarians working abroad did not appear as a completely separate economic topic, but rather as part of a broader, politically charged migration discourse. This may explain why neutral lexical elements remained dominant, while the ratio of emotionally charged positive and negative elements reacted more sensitively to periods associated with

crises, labour market changes, and political campaigns. A similar pattern can be observed in the SGI, which again fell to approximately 1.0 in 2015. This suggests that the increasingly politicised migration discourse substantially reduced the positive framing previously associated with labour mobility and working abroad.

Finally, the 2018–2019 period was a bit of an emotional roller coaster. In 2018, the proportion of neutrality dropped significantly, which can be explained by emigration becoming a central political issue in the election campaign, for example, through the juxtaposition of “young people driven away” and “programs to bring them home.” In 2019, however, both the proportion of positive terms and the proportion of neutrality terms rose simultaneously, which may be due to record-high remittance levels or to the narrative of certain media outlets emphasising “return migration.” Among the economic impacts of migration, remittances play a prominent role ([World Bank, n.d.](#)), as they help stabilise household incomes in the sending country, while return migration and diaspora ties influence labour market structures in the longer term ([de Haas, 2010](#); [Ratha, 2005](#); [World Bank, 2023](#)).

Overall, the answer to the second research question is that sentiment in articles related to working abroad was unstable between 2000 and 2021 and exhibited a pattern sensitive to political and economic turning points. The Sentiment Gap Index showed substantial fluctuations over time, reaching its highest values during the EU-accession period and its lowest values during the 2007–2008 economic downturn and the 2015 migration crisis. These findings suggest that the emotional framing of working abroad was closely linked to broader political and socio-economic developments. Higher SGI values reflected periods in which positive evaluations of working abroad clearly outweighed negative ones, whereas values approaching 1 indicated a more balanced emotional framing.

Neutral lexical elements remained dominant throughout, but the gap between positive and negative sentiment changed significantly over time, particularly during the 2008 economic crisis, the 2011 labour market opening, the 2015 migration crisis, and the political and economic shifts of 2018–

2019. During the period of EU accession, a positive, opportunity-focused framing was more common, whereas in subsequent periods of crisis, working abroad increasingly came to be seen as a sign of domestic problems, labour market uncertainties, and social losses. Sentiment dynamics, therefore, do not reflect an emotional shift in and of themselves but rather a transformation in the social and political significance of working abroad.

The Relationship Between Agenda Weight and Emotional Dynamics. A partial correlation can be observed between the results of the two charts. During periods when the number of articles on working abroad increased, emotional dynamics often fluctuated more strongly as well. This is particularly evident during the 2008 economic crisis and the 2015–2016 migration crisis, when the topic became both more prevalent and more emotionally charged. At the same time, the correlation is not mechanical. After the opening of the labour market in 2011, for example, the number of articles gradually increased, while the discourse temporarily shifted into a more normalised, neutral, and administrative framework. This suggests that an increase in the issue's prominence on the agenda does not necessarily entail a more negative or emotionally charged tone; the emotional direction is always determined by the specific political-economic context. Overall, the relationship is not a simple correlation between article volume and emotional tone, but rather a context-dependent co-movement. The number of articles and sentiment move more strongly in tandem when working abroad is embedded in a broader social crisis or political discourse.

It follows that the media significance of working abroad cannot be described merely by the number of appearances, but also by the emotional and political context in which it appears during a given period. The increase in the number of articles becomes particularly meaningful when examined alongside changes in emotional intensity, as this reveals when the topic shifted from a simple labour market issue to a broader social problem.

DISCUSSION

The results show that working abroad should not be interpreted merely as a phenomenon related to

migration or the media. Rather, it should be understood as part of broader socio-economic challenges affecting Hungary and other semi-peripheral European economies. The first research question examined how the emphasis placed on working abroad in the Hungarian online press changed between 2000 and 2021. The results suggest that media attention did not evolve continuously or uniformly over time. Instead, it followed a cyclical and event-driven pattern. Accordingly, coverage was relatively moderate in the early 2000s, reached a low point in 2007, then increased following the opening of the Austrian and German labour markets in 2011, and peaked in 2016. This pattern suggests that media attention to working abroad was shaped not only by the actual availability of job opportunities abroad or mobility trends, but also by broader political and socio-economic turning points.

The results are consistent with previous studies that have shown that Hungarian emigration intensified after the financial crisis and became increasingly linked to wage differentials, limited opportunities in Hungary, and labour market pressures (Bodnár & Szabó, 2014; Hárs, 2016; Blaskó & Gödri, 2016). However, this study supplements this literature by demonstrating how these processes became visible in public discourse over the longer term. The increase in media coverage after 2011 suggests that the opening of the Austrian and German labour markets not only increased mobility opportunities but also made working abroad an increasingly widespread and socially accepted life strategy. This interpretation is consistent with research on post-enlargement European mobility, which emphasizes that cross-border labour migration is shaped by unequal wage levels, labour market conditions, and opportunities for social advancement across Europe (Favell, 2008; Kahanec et al., 2010; European Commission, 2011).

The media peak in 2015–2016 is particularly significant because it demonstrates that working abroad has become embedded in a broader and highly politicized migration discourse. During this period, Hungarian citizens working abroad increasingly appeared in the public sphere not merely as individual workers, but also as symbols of domestic labour shortages, demographic concerns,

dissatisfaction with public institutions, and uncertainty regarding future prospects. This finding is consistent with studies indicating that, in Hungary, political communication regarding migration has increasingly relied on security-oriented, identity-related, and emotionally charged frameworks since 2015 (Bernáth & Messing, 2015; Bocskor, 2018). The present analysis adds that, in this context, emigration can function both as a counterpoint to narratives about immigration and as an indicator of domestic socioeconomic tensions.

These findings place foreign employment within the framework of the broader socio-economic challenges characteristic of semi-peripheral European economies. From a sociological-economic perspective, labour mobility is not merely a response to wage differentials; it is also shaped by unequal structures of opportunity, labour market uncertainty, and uneven institutional capacity aimed at ensuring predictable life prospects (Bohle & Greskovits, 2012; de Haas, 2021). In Central and Eastern Europe, cross-border mobility has developed within the framework of various forms of peripheral capitalism, in which economic convergence, labour market transformation, and the capacity of the welfare state have often progressed unevenly across social groups and regions (Bohle & Greskovits, 2012; Hárs, 2016). The cyclical pattern of media reports identified in this study is therefore consistent with the interpretation that working abroad becomes particularly significant in public discourse when structural pressures transform into collective concerns regarding labour shortages, social mobility, public services, and the future of opportunities at home.

The second research question examined how the emotional framing of working abroad changed over time. Throughout the entire period, neutral lexical elements dominated the corpus, which is consistent with the conventions of hard news striving for objectivity (Tuchman, 1972; Schudson, 2001). The relevant finding, therefore, is not the predominance of neutral language use itself, but rather the shifting balance between positive and negative expressions. At the time of EU accession, working abroad was more strongly associated with opportunities, mobility, and European integration, in line with broader expectations regarding modernization and

social progress in Central and Eastern Europe ([Favell, 2008](#); [Kahanec et al., 2010](#); [Göncz & Lengyel, 2021](#)). Following the 2008 financial crisis, however, the discourse became more emotionally volatile, suggesting that working abroad was increasingly associated with unemployment, debt-related pressures, precarious working conditions, and limited domestic career opportunities ([Bohle & Greskovits, 2012](#); [Bodnár & Szabó, 2014](#); [Greskovits, 2015](#)). Furthermore, the more normalized tone following the opening of the Austrian and German labour markets in 2011 also indicates that increased media attention did not necessarily result in stronger emotional polarization; under more predictable and accessible mobility conditions, working abroad could also emerge as an everyday labour market strategy ([European Commission, 2011](#); [Hárs, 2016](#)).

The renewed emotional intensity after 2015 suggests that the meaning of working abroad was strongly shaped by its broader political and socio-economic context. Political communication regarding migration and security-focused narratives created an interpretive framework in which working abroad was linked not only to higher wages and opportunities but also to labour shortages, demographic decline, family separation, and uncertainty regarding prospects for life at home ([Bernáth & Messing, 2015](#); [Bocskor, 2018](#)). This interpretation is consistent with research in the sociology of economics, which suggests that labour market uncertainty can intensify feelings of social vulnerability even when aggregate employment indicators are improving, while economic decisions are also shaped by institutional trust and expectations about the future ([Kalleberg, 2018](#); [Beckert, 2016](#)). The findings are also consistent with the view that migration reflects, on the one hand, the search for better life opportunities and, on the other hand, the need for the financial, social, and institutional resources required to realize them ([de Haas, 2021](#)). Thus, the findings, which reflect public sentiment, do not directly measure individual attitudes; rather, they show how the social meaning of working abroad has shifted between opportunity-oriented and uncertainty-oriented narratives, making it a visible manifestation of broader socio-economic challenges.

Overall, this study contributes to research on migration, media discourses, and economic sociology by highlighting that working abroad can serve as an indicator of broader socio-economic challenges. Reports appearing in online media do not directly measure the extent of migration or objective economic conditions. At the same time, they can shed light on when structural inequalities, labour market tensions, dissatisfaction with institutions, and uncertainty about future prospects become publicly visible and politically significant. A longitudinal analysis of the prominence and tone of topics covered in the media therefore complements traditional migration, employment, and wage statistics by demonstrating how structural processes evolve into collective narratives and shifting assessments of social reality.

CONCLUSIONS

This study examined representations of working abroad as conveyed by the Hungarian online news media between 2000 and 2021, with a particular focus on the level of media attention and emotional framing. The level of attention was cyclical: the volume of coverage was moderate in the early 2000s, reached its lowest level in 2007, then rose following the opening of the Austrian and German labour markets in 2011, and peaked in 2016. Working abroad became most visible when it was linked to broader concerns. It was portrayed not merely as an individual employment decision, but also as a social issue linked to wage disparities, labour market pressures, labour shortages, dissatisfaction with institutions, demographic concerns, and future life prospects.

The frequency of these articles is not a direct measure of migration volume or objective economic conditions. Rather, it indicates when working abroad became publicly visible and socially significant, complementing labour market, wage, and migration statistics. The increase after 2011 suggests that cross-border employment became a more accessible life strategy, while the peak in 2016 indicates that it became embedded in the politicized discourse on migration, labour shortages, national loss, and domestic social problems.

Neutral lexical items dominated the corpus, accounting for an average of 93.6% of all tokens. This

is consistent with the conventions of hard news, but it does not mean that working abroad has become socially or politically neutral. The most important finding is the shifting balance between positive and negative lexical elements. Around the time of Hungary's EU accession, working abroad was more frequently associated with opportunities and European mobility. After the 2008 financial crisis, the discourse became more emotionally volatile and was more closely linked to economic uncertainty, precarious employment, debt-related pressures, and limited domestic career opportunities. The renewed sensitivity after 2015 suggests that working abroad was also linked to narratives concerning migration, public safety concerns, demographic decline, and dissatisfaction with domestic institutions.

The relationship between media attention and public sentiment was context-dependent rather than linear. Higher frequencies of articles often coincided with stronger emotional fluctuations. After 2011, however, increased attention also coincided with a more normalized and administrative discourse. Salience and sentiment thus capture different dimensions of meaning in public discourse: prominence indicates when an issue becomes important, while framing shows whether it is interpreted as an opportunity, a routine labour market strategy, a sign of social inequality, or a response to uncertainty. The results thus support the view that working abroad is a manifestation of the broader socio-economic challenges experienced in Hungary and other semi-peripheral European economies.

Several limitations must be taken into account. Dictionary-based sentiment analysis classifies words without fully accounting for sentence-level context. The "bag-of-words" approach cannot reliably identify negation, irony, sarcasm, quotations, or the subject of an evaluative statement; the indicators should not be interpreted as direct measures of public opinion. The analysis is limited to mainstream Hungarian online news portals and does not take into account the print media, television, radio, social media, political speeches, or public comments. During the keyword-based selection process, relevant texts may have been omitted, or articles may have been included in which working abroad was only mentioned indirectly. The

annual summary may obscure differences across various media outlets, genres, political orientations, and specific events, and the corpus does not extend beyond 2021.

Future research could compare Central and Eastern European countries to distinguish regional patterns from national differences. Topic modeling could identify recurring themes, including wages, labour shortages, family separation, public services, return migration, education, healthcare, and national identity. Supervised sentiment classification and more advanced language models could improve the handling of contextual meaning, irony, and task-specific evaluation, while news source-level analysis could reveal systematic differences among news organizations. Integrating media indicators with labour market and demographic data—including wages, unemployment, job openings, migration flows, remittances, regional inequalities, and public service capacity—could provide a more complete picture of how structural conditions and public perceptions evolve together. Overall, the discourse in online news media offers further insight into how socio-economic challenges are transformed into public discourse about opportunities, uncertainty, and future life prospects.

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Statement on the Use of AI Tools

During the preparation of the manuscript, Grammarly and DeepL were used exclusively for linguistic editing, stylistic improvements, translation support, and clarifying certain scientific formulations. The authors reviewed, corrected, and approved all AI-generated results and assume full responsibility for the accuracy, originality, and integrity of the final manuscript. These tools were not

used for data collection, corpus construction, keyword filtering, sentiment classification, or statistical analysis. No AI tools are listed among the manuscript's authors.

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Conflict of Interest

The authors declare no conflict of interest.

Data Availability Statement

The data and supporting materials used in this study are available in the The ARP Research Data Repository ([Nagy et al., 2026](#)).

Informed Consent

Ethical approval was not required for this study because the research did not involve human subjects, interviews, surveys, experiments or personal data collection from individuals. The analysis was based on publicly available online news articles and aggregated corpus-level data. Accordingly, no additional ethical approval was required to conduct this study.

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APPENDIX A. Basic list of keywords

employee, worker, settlement, leaving, labour mobility, working abroad, brain drain, border, EU, Europe, Union, migration, settlement, livelihood, financial, mobility, wage gap, wage level, workforce, return, skilled, family reunification, graduate, skilled worker, housing, making a living abroad, is it worth it, to go, campaign, success, happy, experience, emigration, diaspora