

BABEŞ-BOLYAI UNIVERSITY CLUJ-NAPOCA
FACULTY OF SOCIOLOGY AND SOCIAL WORK
DOCTORAL SCHOOL OF SOCIOLOGY

**SOCIOLOGICAL STUDY OF INTERNET USAGE HABITS OF YOUNG
HUNGARIANS IN TRANSYLVANIA AND THE PHENOMENON OF
DIGITAL INEQUALITY**
DOCTORAL THESIS

DOCTORAL STUDENT: RUSU SZIDÓNIA
SCIENTIFIC COORDINATOR: PROF. DR. VALÉR VERES

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INTRODUCTION

The central theme of the doctoral thesis is the study of the various dimensions and processes of digitalisation, with a special focus on changes in Internet usage patterns and their social dimensions. The aim of the research is to explore the phenomenon of digital inequalities, especially among young Hungarians in Transylvania, using cohort-specific and regional data, using a complex methodology. The theoretical basis of the thesis is provided by classical models such as Hargittai and Hinman's (2008) or Van Dijk's (2020) three-wave model of digital inequality. The research focuses not only on differences between users and non-users, but also on differences between users. The notion of digital capital, which refers not only to the ownership of technological assets but also to their socio-economic exploitation, is given a prominent role. The paper starts from the assumption that there is a close link between offline and online spaces of social exclusion: those who are disadvantaged in the offline world remain disadvantaged in the online space. The research is organised along three main strands: (1) mapping macro-level trends based on digitalisation changes over the last twenty years, (2) developing user types and typologies, and (3) analysing discourses on digital inequalities. The paper uses seven databases that provide insights into the evolution of internet usage patterns and digital access at different levels (macro, regional, ethnic and cohort). The structure of the dissertation is logical: the theoretical framework introduces the reader through the concepts of knowledge society, digital divide and information capital; the methodological section presents the research questions, hypotheses and methods used; the empirical chapters explore the interrelationships between digital competences, capital distribution, digital attitudes and social background factors. The final section of the paper also examines the impact of AI and suggests directions for future research. Overall, the thesis provides a comprehensive picture of the role of digitalisation in reproducing social inequalities, especially in the context of young Hungarians in Transylvania.

THEORETICAL BACKGROUND AND ANALYSIS OF RELEVANT LITERATURE

Digitalisation is not just a technological phenomenon, but a profound social transformation that creates and reinforces new structures of inequality. Different social theory and information paradigms are used as a starting point for understanding digital inequalities, linking differences in access to technology and the ways in which it is used to socio-economic and cultural factors. Five main approaches have been used throughout the thesis to help us understand the sociological and social explanations of digital inequalities. Firstly, we considered the main paradigms of the information and knowledge society, the relationship between social stratification and digital capital, the three temporal and spatial waves of digital inequalities, the intertwining of the network and risk societies, and, embedded in all these, a multidimensional approach to digital inequalities.

1. The paradigm of the information and knowledge society

Theories of the information society follow two main lines of interpretation. One argues that digitalisation is radically transforming social structures (e.g. Beck, 2003; Bell, 1980), while the other sees this change as an evolutionary process, a historical continuum (Roszak, 1990). Daniel Bell's post-industrial model of society emphasises the role of information and knowledge as strategic resources for social development, while Manuel Castells' (1996) concept of a 'network society' emphasises the structural effects of information flows. The concept of the knowledge society (Drucker, 1969; Dessewffy, 2004) sees knowledge as the new determinant of economic and social resources, which is represented as a stratifying element in the form of intangible capital. The possession of information capital is thus closely related to the social position of individuals, their opportunities and chances of prospering in the labour market (Rusu, 2021).

2. Merging the network and risk society

In addition to Castells' (1996) model of network society, Beck's (2003) theory of the "risk society" provides an important framework for understanding digital inequalities. While Castells emphasises the transformative power of global networks, Beck points out that new technologies bring not only opportunities but also new types of risks - especially for disadvantaged groups. These risks are unevenly distributed and often remain invisible, further widening the digital and social divide (Allen & Sprigings, 2001; Duff, 2022).

3. The relationship between social stratification and digital capital

Classical theories of stratification such as Durkheim's functionalism, Marx's class theory or Weber's multidimensional approach continue to guide the interpretation of digital inequalities (Farkas, 2018; Veres, 2023). The Erikson-Goldthorpe-Portocarero (EGP) scheme, which considers the triad of employment, education and income as determinants of social position, also plays an important role (Ganzeboom et al, These variables also generate relevant differences in access to and use of digital capital. Digital capital, following Van Dijk (2020) and Ragnedda & Ruiu (2020), is a complex resource that, in addition to access to ICT tools, also includes their use at the skill level, in a secure and value-oriented way.

4. Waves of digital inequalities

In the study of digital inequalities, we distinguish three main waves, which are also discussed in the empirical part of the study for young Hungarians in Transylvania, according to the time period of the study. According to the models, we distinguish the following waves, which can be defined in space and time when studying digital inequalities:

- Primary digital inequality: differences in device use and internet access (Hargittai & Hinnant, 2008),
- Secondary digital inequality: by quality of use, skills and goals (DiMaggio et al., 2004),
- Tertiary digital inequality: the use of digital tools in social life, the conversion of opportunities (Helsper, 2012).

Our research suggests that these waves are not only the consequences but also the causes of social exclusion, so the digital space can also be interpreted as a medium for the reproduction of offline inequalities (Székely & Rusu, 2023).

5. Multidimensional approach: structural and subjective resources

The novelty of the paper lies in the application of a **multidimensional model of** digital inequalities. personal (e.g. mental health, motivation), social (family background, network of relationships), cultural-economic (education, income), and political dimensions (participation, ideological embeddedness) all contribute to whether someone is digitally disadvantaged or advantaged (Helsper, 2012; Van Deursen et al., 2021). In this way, digital capital distribution maps patterns of social capital distribution and, according to the logic of the digital space itself, can even deepen them. Digital access may seem universal, but at the level of use, new stratifications and mechanisms of exclusion emerge (Zillien & Hargittai, 2009). Digital inequality is not a mere technical issue, but a deeply structured social problem, inseparable from the dimensions of education, economy, culture and power. The aim of this research is not only to map these phenomena, but also to gain a deeper understanding of their social reproduction mechanisms.

METHODOLOGY

The methodological framework of the research is based on an interdisciplinary, quantitative approach, which aims at a complex, multidimensional investigation of digital inequalities. The thesis can be understood primarily as a descriptive and explanatory type of research, which uses deductive logic, theoretical models and empirical data to confirm or reject the hypotheses formulated.

The research focuses on the different age groups of young Hungarians in Transylvania. Using seven different databases, we tried to capture the main trends in digital inequalities from 2001 to 2024 and the main media discourses that can be associated with them. Through a descriptive analysis over time of the DESI index (Digital Economy and Society Index) and the OECD countries' economic and digital indicators, we wanted to build a comprehensive picture of the digital infrastructure in Romania and within it the Hungarian youth in Transylvania, how these structures evolved between 2014-2023 and what indicators are drawn in terms of residence type, gender and age group. The situation of young people in Romania and the evolution and extent of

their digital competences were also analysed using the PISA 2022 database, paying particular attention to how certain groups of competences are influenced by different socio-demographic variables. Using the MOZAIK 2001, and the Hungarian Youth 2016 and 2020 databases, we explored the different dimensions and their effects on the media consumption habits, digital segmentation and digital palette of young Hungarians aged 15-29 in Transylvania. In addition, the Transylvanian Hungarian Secondary School Students Survey 2020 database was used, with a special focus on mobile phone usage and competencies among the 14-19 year old generation. We also examined digital inequalities in the Hungarian Youth 2016 and Transylvanian Hungarian Secondary School Students 2020 databases using a complex multistage and multivariate model, highlighting the impact of each of the background variables on digitalisation. In the empirical part of the thesis, we also conducted a qualitative data analysis of mainstream discourses on digital inequalities, in particular the digital situation of those at risk, which shape public opinion on this issue, analysing 420 online media articles on digitalisation between 2020 and 2024 using semantic discourse analysis.

Thus, several methodological tools were used in the analyses, namely bivariate and multivariate statistical analyses (such as cross-tabulations, T-test, correlation coefficient measurement, factor analysis, and multistep linear regression analysis). Hierarchical and K-means cluster analysis was also used in the analyses, which allowed grouping young people according to their digital profile. Time-series comparisons, which tracked digital trends over the period 2001-2023, allowed us to examine different waves of digitalisation in the target population. The discourse analysis, in turn, took into account the digitalisation narratives in the media and public discourse. The study also paid special attention to background variables such as educational attainment, parental status, income, type of residence, values and political orientation, and satisfaction indicators. In addition to statistical testing of hypotheses, the data analysis also explored the relationships between variables. A total of ten hypotheses were formulated in the thesis, several of which related to structural factors of digital inequalities, others to Internet usage patterns, value orientation and the social reproduction of digital capital.

The research methodology allowed for a multi-level - individual, social and discursive - analysis of digital inequalities. Through the combined use of data and analytical techniques, the thesis was able to map the factors that determine who gains and who loses from digitalisation.

EMPIRICAL DATA ANALYSIS

1. Romania's digital development in the European Union: trends and challenges (2000 - 2024)

Since joining the EU, Romania's digital development has followed a dynamic yet uneven path. The country belongs to the group of so-called "Digital Challengers" (e.g. Hungary, Poland, Bulgaria), where the level of digitalisation is lower but the growth potential is significant. According to McKinsey's ranking, Romania lags behind the "Digital Frontrunners" (e.g. Finland, Estonia) and the "Big 5" (e.g. Germany, France) in terms of technological development. Economic indicators, in particular GDP and R&D spending, also confirm the digital gap. According to 2023 data, the per capita GDP growth of the Digital Challengers was 1.22%, while Romania's R&D spending as a percentage of GDP was only 0.47%, compared to the EU average of 2.23%. The European Commission's DESI index ranks Romania last among EU Member States in 2022. The country performs best in terms of network infrastructure (e.g. broadband internet coverage 89.4%), but 5G network coverage is only 26.75% compared to 81% in the EU. Human capital indicators are also lagging behind: only 28% of the population has at least basic digital skills (EU average: 54%) and the share of companies involved in ICT training is only 6% compared to 20% in the EU. Businesses' digital maturity is also low, with only 16.8% using an ERP system, compared to over 50% in the major digital leaders. The use of social media, big data and other advanced digital technologies is also well below the EU average. Overall, Romania faces significant structural challenges in its digital transformation. Although some progress has been made in recent years, the country's level of development remains below the EU average, especially in innovation, human resources and business digitalisation. Targeted investment in digital infrastructure, education and the R&D sector is essential for further progress. The macro-data analysis also examined digital competences by age group, type of municipality and gender, using Eurostat and DESI databases, according to five core competences (information and data use, communication and online collaboration, digital content creation, problem solving and digital security). Although the data do not allow for significant statistical relationships between digital competences and social stratification, the rates show differences by gender, age, education and place of residence. Young, highly educated, urban residents have the highest digital capital, while older, less educated, rural residents are the most disadvantaged.

2.Secondary digital inequalities

The aim of this sub-chapter is to present the different dimensions of primary and secondary digital inequalities. While in primary digital inequality, we consider the access divide, which becomes apparent in the number of users and, for some devices, in the use of the device (Molnár, 2015), in the early digital divide, we consider the divide in the quality of use, which is intended to reveal differences between users (Van Deursen and Van Dijk, 2018). In each chapter of this subsection, we take a five-dimensional model of digital inequalities as a starting point and look descriptively at how these change over time and at the differences in usage patterns across social groups. The five dimensions we consider are, on the one hand, technical equipment, autonomy of use, digital IQ or DQ, or the presence of skills and abilities, and different purposes of use (DiMaggio - Hargittai, 2004). The social embeddedness and social support for digitalisation, in the analysis of macro data, have been discussed in a previous chapter. For the description of some dimensions, this chapter uses the Mozaik 2001 (early digital divide phase) and the Hungarian Youth Survey 2016 and 2020 (secondary digital divide phase) data sets. Taking into account the data on indoctrination and internet use, we can say, on the one hand, that socio-demographic factors are related to internet use and its frequency in surveys over the last two decades, as those with low levels of education or living in rural areas use the internet significantly less, probably due to workplace factors, while young people living in urban areas and those with higher levels of education have higher internet use rates. Although no significant gender differences in internet use were found, there is a difference in the use of different platforms between boys and girls, especially for Generation Z. However, the purposes and methods of use will be discussed in more detail in a later chapter. It is also important to underline that being constantly present in the digital world, on social media, does not necessarily contribute to an individuals well-being indicators.

Social media oriented information consumption is high on the list of information channels and consumer preferences Although it has lost some of its popularity compared to 2016, probably due to the changes and fake news caused by the Covid-19 epidemic, it is still very popular among young people. The shift in information consumption is also reflected in the fact that the younger generation prefers to be informed by opinion leaders, followers and influencers, while the older and more educated the consumer, the more they prefer other sources of information. Although

information consumption has moved to fully interactive platforms, content production itself is less popular among young people.

3. Development of digital skills and competences

Competences and digital skills are an important dimension of secondary and tertiary digital inequalities. However, this was not a specific focus of the Mozaik and Hungarian Youth research, so we can use the Transylvanian Secondary School Students 2020 survey and Eurostat research, PISA surveys, and the DESI research in the previous chapters to identify the digital competences of Hungarian youth in Transylvania. Overall, compared to other countries in the European Union, young people in Romania are significantly behind in basic and above basic digital skills and competences, while the extent and type of their skills are determined by socio-demographic variables such as gender, parents' educational attainment or family financial background. The research results show that there are also differences between boys' and girls' digital skills, with boys scoring higher in STEM and technical skills, while girls scored higher in basic digital communication. In addition, the level of education of parents is also found to be a determining factor, as the higher the education level of the mother or father, the better digital skills young people have. This is particularly true in the case of content production and security awareness skills, as children of parents with higher education have stronger and higher levels of skills. At the same time, the subjective financial situation of the family also shows a significant correlation with digital skills, which also means that young people in a better financial situation are more likely to develop digital competences. The results of the 2020 Transylvanian Secondary School Students Survey both confirm and nuance this picture. Although basic smartphone skills are available to almost all young people (such as taking screenshots, installing apps, changing social media settings), there are already significant differences in digital security and financial awareness. For example, while almost all students are able to block someone or customise their Facebook privacy settings, only 80.1% know where to find information about smartphone safety and only 22% have an app installed on their phone that restricts phone use.

If we compare the trends in the results of the 2001 and 2020 surveys, we can draw the following conclusions: on the one hand, as far as values are concerned, the most important values in 2001 were family, future plans, work and vocation. In 2020, the most important values for secondary school students were relationship orientation (such as keeping in touch with friends and

acquaintances), post-material values (such as beauty, peace and love) and community values (such as family and community cohesion). Volunteering, traditionalism and religiosity were also less prominent in 2020. In 2001, computer use is less strongly linked to leisure time, work and future plans, as in the first phase of digitalisation we can talk less about a mediatised society, leisure time and values, with offline relationships dominating and values less linked to online space. By 2020, social media and online presence had become ubiquitous, in particular due to the Covid-19 epidemic, which further reinforced the importance of digitally connectedness. The results of the two studies therefore suggest that, on the one hand, digitalisation and the presence of social media have had an influence in shaping values over the last two decades, as values have increasingly shifted from the offline world to the online space, with autonomy, success and relationship orientation becoming more important for young people, while traditional and spiritual values have become less dominant in the digital age.

3. Digital segmentation among young Hungarians in Transylvania

In the previous chapters, we have examined the relationship between socio-demographic variables and factors including well-being, values, satisfaction, leisure activities, cultural consumption and political ideologies on the one hand, and the frequency of internet use on the other, using the Marien and Prodnik (2014) model as a starting point. In this chapter, we use the available datasets to look at the digital segmentation of young people in 2016 and 2020, using the Ragnedda and Ruiu model (2018), using different dimensions of digital inequality. If we compare the results for 2016 and 2020, we can say that in 2020, the digital clusters are more mixed, with the role of connectivity and social media being more prominent in both the traditional and the highly digital clusters. However, in terms of the importance of information sources, a new group will be the most dominant for younger, lower educated groups, namely influencers, YouTubers and self-followers. They will also be preferred by higher educated young people, but will give more importance to centralised information sources and consume traditional media products.

4. Multivariate linear models of digital inequalities among Hungarian youth in Transylvania

In this chapter of the thesis, a multivariate linear regression was also used to test which of the different social, socio-economic background variables and socialisation factors have a

significant effect or play a greater role in the development of digital inequality (Rusu, 2021). The two regression models investigate digital inequality among young people, based on data from the 2016 Hungarian Youth Survey and the 2020 Transylvanian Hungarian Secondary School Students Survey. In both cases, the dependent variable is a complex digitalisation index, which includes access to technological tools, autonomy of use, digital competences and online cultural consumption. Based on the 2016 data, educational attainment was found to be the strongest influencing factor: the higher the level of education, the higher the level of digital well-being. In addition, gender, subjective financial situation and online cultural activity also have a significant impact. Values and openness to innovation also play an important role: modern, technology-friendly values are more strongly associated with digital presence. In the 2020 Transylvania survey, where the vast majority of secondary school youth were already equipped, digital inequality and social media use were the focus. Here, too, the effects of gender, age, GPA and values were detected. Being independent and relationship-oriented tends to increase online activity, while strong interpersonal relationships and post-material values (e.g. freedom, morality) tend to reduce it. Overall, both studies show that digital inequalities are not only influenced by demographic factors such as gender, age, educational attainment, but that individual values and worldviews also play a significant role in how active or present one is in the digital space.

5. Discourses and narratives on digital inequalities

In this chapter of the thesis, the most used media discourses, themes and strategies related to digital inequalities, digitisation and internet use, and the most prevalent in the press and media organs are examined in two different press and media communities: the Romanian language press organs in Romania and the Hungarian press in Transylvania. A series of quantitative analyses revealed that there is a significant synergy and interaction between digital inequalities and social inequalities, with the presence of smart devices not only helping but also deepening the catching-up of at-risk groups. Romania has highlighted four key areas of digital development in its National Action Plan for the Digital Decade 2023, as part of the European Union's Digital Agenda for the Digital Agenda, such as the development of digital skills, the development of digital public services, the digital transformation of businesses and the creation of sustainable infrastructures. Based on more than 420 press articles analysed between 2020 and 2024, the discourse on digital inequalities is organised around several main themes. Among socio-

demographic and economic factors, the situation of the poor, the rural poor, the low-educated and women were highlighted, while the specific patterns of internet use of segregated groups and their catching-up were overshadowed. This approach is in line with the objectives of the Digital Agenda for Development. In the context of digital literacy and education, it was mainly the independent press that emphasised Romania's digital skills gap, while the pro-government media tended to highlight promises of improvement. Education, however, is presented as a response to digital inequalities, although specifics are often lacking. Discourses on technological development and e-inclusion typically emphasise structural and economic aspects and are often linked to EU funding. The issue of social stratification is also raised, but mainly as an opportunity rather than a challenge. Interpretations at the ideological level differ according to the orientation of the press: while the independent media approach digital inequality in a problem-centred way, the pro-government press focuses on national and local development promises. In discourses on media use and gender, the digital divide is often presented as a problem that can be bridged. Narratives on the role of women are largely positive, highlighting digitally active, entrepreneurial women, while the mention of artificial intelligence is not necessarily unilaterally positive. The common context of the discourses is the coronavirus epidemic and online education, as well as the Digital Development Strategy 2030, which have shaped the narratives of the period under study.

CONCLUSIONS

Since the 2000s, the rapid development of digitalisation has brought many new opportunities for young people, but also many new challenges. Although access has changed significantly over the last two and a half decades, network structures, digital and technological innovations have enabled individuals to engage in the online world. Nothing shows this better than the fact that, while in 2001 less than 25% of young people surveyed owned a computer, with the advent of smartphones, more than 98% of young people aged 16-29 have a smart device that gives them access to the internet. However, as we have seen in both the theoretical and practical sections on digital inequalities, device access is not everything. In our paper, we have highlighted the trends in young people's online activities across different waves of digital inequalities. In the descriptive part of the research, we tried to illustrate, using time-series macro and regional data, the digital infrastructure, skills and opportunities in Romania, and how they have evolved over the last

decades, taking into account the digital dimensions such as accessibility, toolbox, autonomy of use, digital skills. In our analysis, we have shown that young people in Romania start from a disadvantaged position also at the structural level, as the country lags behind in other factors in a European comparison, despite the fact that network coverage and internet speed are outstanding. For young Hungarians in Transylvania, we examined trends in digital inequality along different digital dimensions. Throughout our thesis we referred to the digital divide as inequality, as this also showed us, which was later confirmed by empirical data, that digitalisation has not bridged but has rebuilt and sometimes deepened the social inequalities that segmented young Hungarians in Transylvania in the offline world. At the same time, our data also led us to conclude that it is not only traditional stratification factors that affect young people's digital inequalities, but also their values, attitudes and perceptions of the world and of themselves that influence their openness to digitalisation. Another important conclusion from the analysis in this thesis was the extent to which digitalisation and value patterns have changed during the Covid-19 epidemic, with the compulsory nature of online life (online education, remote, online work) triggering a counter-cultural attitude among young people and valuing their friends and family connections. Although internet use increased significantly during this period, offline activities were valued and became an important part of young people's lives.

The explanatory analyses concluded that education, family income, type of settlement, gender, age group and traditional stratification variables also affect digital activity, information acquisition patterns and competences. The majority of young people have basic skills, but the more complex a task becomes, the less able it is for groups who start from a disadvantaged position in society. Based on the principal component analysis, we have identified four digital competence groups in PISA 2022, as basic digital skills and information seeking, content production skills (audiovisual and written content), security and internet literacy skills, and STEM and technical skills. These were compared with socio-economic background and there was a positive relationship between parental education and digital skills (mean=3 over $p < 0.01$), i.e. children of parents with higher education have more confident digital skills. Subjective perceptions of financial situation also showed a significant relationship with tasks requiring IT skills ($r = 0.076$, $p < 0.05$). Boys performed significantly better in STEM and technical skills (mean: 2.71), while girls scored higher in security and internet awareness (mean: 3.04). In information retrieval and digital collaboration, 44.1 percent of students feel confident performing the required tasks, while

only 27.3 percent feel confident in computer programming and 14.7 percent are not able to perform these tasks at all.

At the same time, consumer segmentation is also determined by these criteria, those who come from an advantaged social position have access to and consume both digital and traditional resources, those in the middle, although highly digitally integrated, their consumption is not necessarily determined by products and actors belonging to high culture. In both 2016 and 2020, a passive group will emerge who, while occasionally consuming and using the opportunities offered by digitalisation, will remain passive, "silent" internet users. By 2020, social consumption will have dissipated and three consumer segments will emerge. Highly digital social media users (28.8 percent) are mostly young 15-19 year olds, living in rural areas and with low education levels, they are intensive consumers of digital content, but they get most of their information from influencers and YouTubers, so the cluster is significantly influenced by the time spent on social media and following online influencers. Traditional digital media consumers are 45.2 percent of young people, they are more likely to be men aged 20-24, they are mixed users of traditional and digital media, television, newspapers and online news portals are important sources of information for them, they have higher education and active working status ($p < 0.01$). Passive or low-active consumers (26%), who are less active internet users, rarely follow social media and are predominantly women with a medium level of education living in rural areas. One of the shortcomings of our quantitative research was that we were unable to measure digitalisation in its entirety, as the databases we used lacked the dimensions to understand in a more complex way how these inequalities are reflected in the digital inequality dimensions. Our multivariate analyses also confirmed the hypothesis that digital inequalities are influenced by traditional social stratification variables, however these effects are not exhaustive as many other factors influence digital inequality patterns, for example in the case of this study the Covid-19 epidemic situation was a major influencing factor. The results of the 2020 linear regression, in line with the 2016 results, show that digital usage inequalities are mainly explained by socio-economic factors. The 2016 model suggests the extent of digital inequality is influenced by socio-demographic, social and cultural factors. In the first model, significant effects were found for the variables of educational attainment ($\beta = 0.289$), type of municipality ($\beta = -0.058$), gender ($\beta = 0.080$), father's physical job ($\beta = -0.072$), age ($\beta = -0.107$) and subjective financial status ($\beta = -0.204$). The results show that young people with higher educational attainment and younger age groups are more likely

to be digitally affluent. In the second model, cultural consumption and values, and belonging to generations Y and Z are included as new variables. Cultural consumption was grouped into two categories: online and offline consumers. According to subjective values, respondents could be either traditionalists or modernists. In the new model, significant Beta values were found for education ($\beta = 0.337$), gender ($\beta = 0.119$), subjective financial status ($\beta = 0.188$), online cultural consumption ($\beta = 0.190$) and value system ($\beta = -0.103$). The explanatory power of the model is 25.9% ($R = 0.533$) and shows that education, gender, subjective material situation, mode of cultural consumption and traditional or modern values influence digital inequality. Education had the largest effect in both models. The analysis shows that, in addition to education, gender and material well-being, cultural consumption and values also play an important role in the development of digital inequalities. In the regression model 2020, community values ($\beta = -0.158$, $p < 0.01$) and post-material values ($\beta = -0.151$, $p < 0.01$) also showed a negative relationship with the digital index, i.e. those who prefer these values are less active in the digital space. The most significant factors influencing the extent of social media use were willingness to be autonomous ($\beta = 0.227$), relationship orientation ($\beta = 0.098$) and, negatively, the number of people living in the household ($\beta = 0.118$).

In addition to quantitative analysis, we also conducted a discourse analysis, as we wanted to get a more complete picture of the attitudes of different actors towards digital inequality issues. The co-occurrence and clustering of each code was investigated through a semantic code network indicating the nodes and edges of these thematic relationships. In the analysis, three clusters were distinguished according to the degree of co-occurrence of codes and topos: one cluster for discourses on the economic-political approach to digitalisation, another cluster for e-inclusion, social stratification and socio-demographic factors, which were discussed in positive or minor ways in the articles. In the third cluster, the co-occurrence of topos can be observed which refer to artificial intelligence, innovation, European digitalisation models, systemic changes. The tone of these articles is more sceptical. Based on our results, we conclude that there is very little actual discussion in these discourses about at-risk groups, digitalisation outliers and concrete possibilities for catching up.

The research therefore formulated 10 hypotheses along the different dimensions of digital inequality, which were tested by examining several databases and empirical data. The aim of the research was to investigate digital inequalities among young people in Transylvania,

with a particular focus on the effects of social background, geographical location, values and media use. Seven of the hypotheses tested were fully confirmed:

- **H2:** Low educational attainment (both young people and parents) is associated with lower digital competence.
- **H3:** There are regional differences: urban young people are more active online than their rural counterparts.
- **H4:** Young people with individualistic, open-minded values are in a better digital position.
- **H5:** Online leisure activities increase digital confidence.
- **H8:** The distribution of digital capital reflects social inequalities.
- **H9:** The social dimensions of digital exclusion are under-represented in public discourse.
- **H10:** Discourses on MI are sceptical; especially disadvantaged young people fear the impact of MI on the labour market.

Partially confirmed:

- **H1:** Device use is more limited in low-income households with large families, but this is not clearly evident due to the uptake of mobile technology and school devices.
- **H6:** The role of social media as a source of information varies by age group and time period, especially for younger, influencer-focused groups.

Not confirmed:

- **H7:** The persistence of a "third wave" of digital inequality has not been demonstrated, as the necessary longitudinal data are lacking.

Digitalisation is not only technological, it is also a profound social transformation that can recreate existing social divides. The digital opportunities for young Hungarians in Transylvania are similar to those for young Hungarians in Romania; the key factor is not ethnicity but social structures . The novelty of the research lies in the fact that it examines long-term trends in a complex way and focuses on the problem of digital exclusion in a multidimensional approach, attempting to understand the mechanisms of tertiary digital inequalities.

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