DOI: 10.29302/Pangeea 25.18

DIGITAL FINANCIAL INCLUSION AND THE REDUCTION OF INEQUALITIES

Assoc.prof. Ph.D. CĂLINA ANA BUȚIU
"1 Decembrie 1918" University of Alba Iulia, Romania

ABSTRACT: *To offer financial access to a disadvantaged segment of society, alongside the digitalization of financial services arises the concept of digital financial inclusion. The reduction in digital inequalities is especially desired in those countries where the differences between those who have access to information technology and those who do not, are large. Women and the elderly in general are affected most in terms of digital competencies and these inequalities are particularly prevalent in the isolated communities of rural China, Latin America, Sub-Saharan Africa and the Caribbean. A good understanding of the factors that lead to financial digital exclusion is the basis for a proper socio-economic policy making.*

Keywords: *digital alphabetization; digital financial inclusion;;gender and age differences; regional differences.*

Introduction

Information and communication technologies (IT&C) have had an enormous impact in human development in modern age, acting as a transforming and disrupting force in all fields of activity. The world is rapidly moving towards a digital paradigm that remodels the whole economic and social environment. Nowadays, where information technology has become an integral part of all aspects of life, digital alphabetization has a far greater impact than the simple demand of computer skills required just a few years back; it is now pushed as a fundamental demand for economic and even social existence. Financial digital inclusion is now one of the fastest growing narratives within the financial and fiscal worlds and has virally attracted the attention of political and financial actors for its revolutionary potential for financial access. Although the principles of digital inclusion are somewhat universal in most countries, their interpretation varies among academic researchers, practitioners and national and international organizations, each stressing different aspects, depending on specific contexts and priorities.

The digital divide is a concept that, at the point of which was conceived, alluded to the difference between those who had access to IT&C technologies and those who did not, the reference being mostly to the Internet. As communication channels grew, in time the notion became more complex, one distinguishing several flavors of digital access.

Financial inclusion refers to access to financial services like bank deposit accounts, various transactions, loans, mobile payments etc. of social groups that typically were socially isolated and excluded from such services. It is a new dimension of financial development, which is generally defined as the process of ensuring access to and usage of basic formal financial services for all people at an affordable cost (Inoue, 2024).

Methods

The objectives of the article are to identify the role that digital financial inclusion plays in the broader concept of social inclusion and to observe the differences that may arise according to gender, age and region. For this, we identified 350 full text articles, with similar or close topics, using the enformation database, created through a project of Association of Universities, Research and Development Institutes and Central University Libraries in Romania. Of the 350 articles we selected 75 in the first stage, by eliminating the articles that did not have sufficient relevance for the theme. The second stage consisted of text analysis, reaching 40 articles, which were subjected to a new filter. In the end, a total of 37 articles were reached, which were subjected to a new filter. In the end, a total of 37 articles were selected, which can be found in the Reference list

Results

Digital exclusion is defined “a situation where a discrete sector of the population suffers significant and possibly indefinite lags in its adoption of Information and Communication Technology (IC&T) through circumstances beyond its immediate control” (Mwansa, Ngandu & Mkwambi, 2025 apud Warren, 2007, p. 375). Financial exclusion is a result of marginalization and exclusion (da Cunha Duarte 2025). The concept of digital financial inclusion was officially introduced during the G20 Summit in Hangzhou in 2016 and encompasses all initiatives aimed at fostering inclusive digital technology integration with the financial sector (Liu et al. 2021).

The expectations of democratizing technology are linked with the demand to eliminate social exclusion as the information society evolves (Kaarakainen & Saikkonen, 2023). Theoretically several channels show how financial inclusion can affect inequalities. As digital connectivity becomes a prerequisite for economic and social participation, digital exclusion increasingly leads to social exclusion (Kim & Jang, 2024). Diamond’s financial intermediation theory underscores the pivotal role of banks in bridging the gap between borrowers and savers, thus minimizing the disparity between consumers with spending deficits and those with surpluses in the market (Van & Le Quoc, 2024).

The nation’s economic development requires inclusive financial services so underprivileged and marginalized communities can benefit from financial services by furnishing access to financial products and elongating credit facilities (Kumari, Giri & Saruparia, 2025, p. 3).

Morte-Nadal and Esteban-Navarro (2025) flag the appearance of a new concept, that of "intermediary leaders" who, although initially conceived as intermediary managers in education they can act in many other fields and play a significant role in the promotion of digital inclusion, by offering the necessary support for reducing structural inequalities. If inclusion is an effort and practice in which groups or individuals with different backgrounds are culturally and socially accepted, welcomed and treated equally, then it implies treating each person as an individual, making them feel valued, and supported, and being respectful of who they are (Fisher, Fearnshaw, Watson et al., 2024).

Finance plays a crucial role in the real economy by delivering essential services and resources that support investment in sustainable projects, encourage the adoption of clean technologies, and promote responsible business practices, which not only enhance financial inclusion, but also accelerate the shift towards a greener economy (Becha et al.,2025).

Confronted with the negative potential of the "grey economy", the sustainable development has become imperative for all world economies. Within this context, the digital financial inclusion becomes a crucial instrument in the promotion of sustainable development. Furthermore, considering the inflationary environment the impact on sustainable development demonstrates the necessity of a structural shift (Dihn, 2025). A policy of financial inclusion may bring a positive contribution to a structural change. Although, there is ample evidence for the popular theory of the Environmental Kuznets Curve demonstrating an inverted U-shaped relationship between emissions and the per capita income of an economy, the study of Shashwat, Chhabra and Giri (2025, p. 2) demonstrates that financial inclusion is enabling economies to move towards lesser emissions and towards the broader concept of green growth in general.

According to De Koker and Jentzsch (2013), financial inclusion does not only refer to provision of access and affordable financial services but making sure that these services reach the large segments of the vulnerable groups.

Since the anti-poverty process is dynamic and often unpredictable, and small communities with meager incomes are vulnerable to stress and shocks – financial in particular – researchers have generously embraced the concept of resilience, had numerous definitions and arisen from diverse fields. Furthermore, definitions have evolved over time but fundamentally resilience is understood as referring to positive adaptation, or the ability to maintain or regain mental health, despite experiencing adversity. The personal, biological, and environmental or systemic sources of resilience and their interaction are considered (Herrman et al., 2011). Hu, Sheng, Ni et al. (2024) suggested a theoretical framework for achieving resilience in rural households once emancipated from poverty. The results prove that resilience is tightly connected to the ability to engage accessible resources, to acquire new knowledge and to access external sources like

information and communication technologies.

The digital inequality is a systemic divide between those that benefit from the resources, the abilities and the opportunities of digitalization and those that are isolated from technology access and efficient utilization of it (van Dijk, 2017 apud Enriquez, Han, Harris et al., 2025 apud). These types of barriers refer not just to connectivity; they reflect wider socio-economic inequalities that obstruct individuals in participating to a more digitized world. This becomes a more central concept in inequality discourse in both social and technological contexts (Enriquez, Han, Harris et al., 2025).

Gender and age differences in digital alphabetization

Numerous studies (e.g. Banerjee, Trappel & Van Audenhove, 2024; da Cunha Duarte, 2025; Damiani &Rodríguez-Modroño, 2023; Enriquez, Han, Harris et al., 2025; Fan, Mao & Sun Does, 2024; Faton, Nonvide & Chabossou, 2025; Kamble, Mehta & Rani, 2024) show that both women and the elderly are subject to inequalities in digital competencies, especially in the financial ones. Although theoretically payment systems are quick and easy to use (da Cunha Duarte, 2025), differences remain in the utilization of financial transactions. Notwithstanding the substantial increase in the number of bank accounts in the last decade, significant disparities remain, particularly for women and small income persons (Özşuca, 2025). Theoretically several channels show how financial inclusion can affect gender inequalities. Research indicates persistent inequalities in digital inclusion, not only between, but within life stages as digital inequality manifests itself at different stages in life (Kaarakainen & Saikkonen, 2023). Empirical work on the role of digital financial inclusion in reducing gender inequalities has mostly been based on the empowerment of women but also on the promotion of female entrepreneurship (Faton, Nonvide & Chabossou, 2025, p.3). The digital transformation of labor markets leads to both gender opportunities and inequities. Although the gender information skills tend to converge, in the European Union, women still lag men in the utilisation of IT&C skills in the workplace. (Damiani & Rodríguez-Modroño, 2023).

In Brazil, basing her study on state reports and on Brazilian women financial inclusion legislative framework Paula da Cunha Duarte (2024) concludes that implementing gender-sensitive measures is a step towards advancing digital financial inclusion.

Digital platforms provide various opportunities for women to work remotely in formal and informal sectors. This enhances their participation rates as they feel more safe and secure. The interaction of digital financial inclusion and women's empowerment discloses a synergistic paradigm where various digital platforms and financial tools allow women to achieve financial autonomy, enhance household welfare, and contribute to inclusive growth (Kumari, Giri & Saruparia, 2025, p. 10).

Limited digital access and skills hinder seniors from fully utilizing online services, potentially leading to social and economic marginalization. Factors like lower computer literacy, technophobia, perceived lack of usefulness, and age-related impairments contribute to this gap (Enriquez, Han, Harris et al., 2025). The study identifies critical roadblocks to elderly integration into the digital world. Significant factors appear to be cultural and financial obstacles that limit seniors' capacity to integrate digitally and use effective instruments in business opportunities.

Additionally, the older population displays distinctive consumption patterns, therefore, the needs are different. Low-income seniors have low consumption patterns to basic needs and do not access digital financial services while high-income seniors are more willing to access them. However, the lack of trust in the use of these services is more dominant among the elderly in general. Fan, Mao and Sun (2024), in their study of the elderly population of China conclude that digital financial inclusion of elderly optimizes consumption patterns, boosting living standards and enjoyment activities and elevating the elderly quality of life.

The study of Tomczyk and Kielar (2025) highlights the importance of a multidimen-sional approach to digital education for older people, considering both practical and emotional aspects, which can lead to a lasting change in the level of digital and media competence in this social group. Understanding the process of motivation appears to be key to achieving success, which is the intentional use of new technologies that can contribute to the quality of life of older people.

In a Liberian study undertaken by Williams and Nagriwum (2025) the authors conclude that

despite younger generation's potential to lead seniors to more digital public services, there is a distinct resistance which limits elderly access to the essential ones. The identification and the mitigation of the causes behind this resistance is vital to inter-generational relationships and to the improvement of digital alphabetization among the elder population.

Digital inclusion as means forreduction of regional inequities

At global level the financial welfare – as a financial health indicator - attracted considerable attention from researchers and political decision makers, especially after financial shocks. Although the COVID-19 impact seems to have regressed, the overall impact over countries with large financial vulnerability rates appears to last longer (Kamble, Mehta & Rani, 2024).

Wu, Zhang and He (2025, p. 3) note that due to differences in infrastructure development in the region, there are still barriers to the flow of data elements, leading to the formation of a digital divide, and this means that developed regions have a stronger competitive advantage over developing regions in the digital age.

As the digital economy grows, the importance of promoting digital inclusion becomes more apparent (Al Afeef & Alsmadi, 2025). Digital inclusion has risen as an important, critical economic growth engine, particularly in the developing regions. In China for instance, in the case of regional economic disparities, the extension of digital financial services contributed to the stimulation of regional development, of digital inclusion and of more sustainable environment management. There are conclusions based on empirical evidence of the transformational role of digital finances over the development and sustainability of environmental concerns that require political intervention for financial inclusion and economic growth (Becha, Kalai & Houidi, 2025).

Global digitalization results in a new digital inequality for both urban and rural areas. The diagnosis and identification of common adaptation strategies are crucial in the new digital environment. Nevertheless, the present state of the digital urban-rural divide remains ambiguous and efficient solutions are still lacking (Fang, Chen, Liao et al., 2024). This results in a rift between individuals of modern societies into the gainers and losers of digitalization (Kaarakainen & Saikkonen, 2023).

Analyzing the effect of digital financial inclusion on gender inequalities in on household consumption in the countries of the Economic Community of West African States, Faton and Chabossou (2024) found that that digital financial inclusion negatively and significantly affects income inequality in African countries. The same goes for the different economic zones of Africa. Their conclusion is that information technology through the promotion of financial services can help reduce poverty in poor countries.

Latin America and the Caribbean as a region display a structural and distinctive socioeconomic fracture (it is the region of the planet where the gap between rich and poor is the greatest), combined with the need to provide different sectors with access to connectivity. The region shows a direct correlation between said socioeconomic fracture and the gaps that can be identified in terms of connectivity, access, coverage, and affordability of ICT services (Califano & Becerra, 2024, p. 58).

Financial inclusion at the level of the African continent where many people do not have access to financial services has to include services to low-income groups with access to formal financial services such as credit for daily transactions, savings and insurance opportunities. In Africa too, as in many areas on the globe, the development of digital technologies represents the foundation of financial inclusion and growth. As opposed to other areas, in which the digital financial providing of services is high, African economies (although also recorded growth) the rate is significantly lower than, say... in European countries. The data indicates that more than half of the African population is excluded from financial services due to poverty and income inequalities (Kouladoum, Muhamadu Wirajing & Nchofoung, 2022).

In a COVID-19 pandemic effects, Osman, Marshall and Dezuanni (2024) demonstrate that the sudden transition to video learning from home resulted in low digital integration for disadvantaged and low-income families in Australia. Most of Australian population lives in the South-Eastern and South-Western areas which benefit from relatively good connections to the country's telecommunication infrastructure. For the Northern area, as well as for living in the interior connections are often poor and pricely.

Digital exclusion has not been found solely due to pandemic reasons, but rather to long-term issues for low-income families that have only happened to be brought to surface by the COVID quarantine.

The Cognitive Mediation Theory focuses on the acquisition and application of knowledge as key tasks in the processing and decision-taking based on information. Studying digital alphabetization one can identify those persons who, having more digital competencies, are more successful in financial information management. This leads to better financial decision making and higher economic success (Al-Afeef & Alsmadi, 2025).

Discussion

Digital services are essential for many activities of daily living including applying for jobs, searching for housing, maintaining social relationships and accessing welfare benefits and financial inclusion. Social inclusion is a classic topic in political science and refers to the respect and protection of disadvantaged and marginalized groups. It is becoming clearer that, as the global society advances through the 21'st century, the economic sphere requires more than the simple capacity for reading and writing - the ability to navigate through the vast possibilities that the information technology presents (Al Afeef & Alsmadi, 2025). Van Dijk (2017) discusses the concept of the digital divide and its impact on social inequality. Filippo Damiani and Paula Rodríguez-Modroño (2023) stress the fact that the ability to productively use digital technologies for professional purposes has become a precondition for successfully integration of one in the digitalized modern economy.

The positive effects of financial inclusion (Mamun & László, 2025) over commerce (Liu, Yang, Zhou et al., 2025) and households are the subject of much social research. The evidence shows that an increased financial inclusion leads to a superior model of development and, in the case of households, to a more diverse spending - beyond that for strict feeding. As a result, those who access more financial services have the possibility to invest in more purposes, other than simply satisfying the basic needs and managing resources more efficiently. This stimulates a more diversified consuming pattern (Jiang, Hu & Cao, 2024). The achievement of equity, diversification and inclusion is thus an important contribuitor to human rights, civilization and responsibility at the social level.

The bottom-up type of solutions offered by local communities may be a better approach for overcoming the digital divide in areas with poor or inexistent Internet connectivity, low rates of digital alphabetization and reduced incomes.

The European Commission has advanced various strategies, projects, and policy initiatives to drive digital transformation's Europe's Digital Decade: digital targets for 2030 outlines the Commission's vision for Europe's digital transition by 2030. To operationalize this vision, the European Commission proposed a 2030 Digital Compass for the European Union's digital decade, structured around four intervention areas: digital skills, digital infrastructures, business digital transformation and public services digitalization. In the first area, which is related to the second and third digital divides, the EU has established an ambitious goal for 2030: ensuring that 80% of its citizens acquire at least basic digital skills (European Commission, 2021).

Conclusions

There is a discrepancy between equality, diversity and inclusion research theory and practices enough to prevent a culture of inclusiveness. Research networks are vital for creating partnerships among both academics and academic and business leaders and for providing new scientific discoveries.

Research on digital financial inclusion provides a double value. On one hand sensitizes the political decision makers to the importance of the problem and on the other, it stimulates the inclusion of digital competencies in the education programs, as the basic mathematical alphabetization did years before. Such measures not only would lead to a higher quality of financial self-governing but would also extend the population served by business opportunities. In the context of financial services, firms should offer their customers more digital education to encourage a higher use of financial digitalization and electronic services; this would result in higher client (and employee) loyalty since more digitalized consumers would be more likely to utilize more sophisticated financial instruments and services.

Either way, one notices that digital inclusion

has gained the attention of political decision makers as a mechanism for financial inclusion (Jia & Kanagaretnam, 2025). Policy recommendations are the necessity to enhance the breadth of coverage and the depth of digital financial inclusion utilization. Strengthening the nexus between financial services and policies, particularly to aid low-income households, and vulnerable groups are a crucial direction for policy implementation.

Financial inclusion is crucial in addressing various social and economic challenges, including its potential impact on health outcomes, affirm Naveenan, Liew and Kijkasiwat (2024). Much research demonstrates the positive effects of financial inclusion and digital finance on expansion. Based on the results of this research, Bu and Xie (2024) suggests increasing digital financial inclusion and bolstering human capital development to stimulate economic expansion.

References

1. Al-Afeef, M.A., Alsmadi, A.A. *Digital empowerment: unraveling the impact of digital literacy on financial mastery*. Discov Sustain 6, 311 (2025). https://doi.org/10.1007/s43621-025-01137-5
2. Banerjee, R., Trappel, J., Audenhove V.L. Evaluating 'Meaningful Connectivity': Digital Literacy and Women in West Bengal, India in Digital Inclusion: International Policy and Research (2024) Simeon Yates and Elinor Carmi (Eds), pp. 225-248. DOI:10.1007/978-3-031-28930-9_11
3. Becha, H., Kalai, M., Houidi, S. et al. *Digital financial inclusion, environmental sustainability and regional economic growth in China: insights from a panel threshold model*. Economic Structures 14, 4 (2025). https://doi.org/10.1186/s40008-025-00347-4
4. Bu, H., Xie, Q.Y. *Linking to the development of economic growth with digital financial inclusion and supply chain management in China*. Environ Sci Pollut Res 31, pp. 24619–24633 (2024). https://doi.org/10.1007/s11356-024-32216-1
5. Califano B., Becerra, M., *Policy Interventions to Address Digital Inequalities in Latin America in the Face of the Pandemic, in Digital Inclusion*: International Policy and Research (2024) Simeon Yates and Elinor Carmi (Eds), pp. 39-62 (2024).
6. da Cunha Duarte, P. *Digital financial inclusion and women: a case study of Pix, the Brazilian instant payment system*. Eurasian Econ Rev 15, pp. 379–400 (2025). https://doi.org/10.1007/s40822-024-00300-z
7. Damiani, F., Rodríguez-Modroño, P. *Measuring the digital inclusion of women: a poset-based approach to the women in digital scoreboard*. Qual Quant 58, pp. 705–722 (2024). https://doi.org/10.1007/s11135-023-01666-z
8. De Koker, L., Jentzsch, N. *Financial inclusion and financial integrity: aligned incentives?* World Dev., 44, pp. 267-280. (2013). DOI: 10.1016/j.worlddev.2012.11.002
9. Dinh, L.Q. *The optimal inflation threshold in digital financial inclusion: a key to sustainable development*. SN Bus Econ, pp. 5- 40 (2025). https://doi.org/10.1007/s43546-025-00810-1
10. Enriquez, R., Han, D., Harris, R. et *al. Exploring digital access and digital engagement of senior small business owners*. Qual Quant (2025). https://doi.org/10.1007/s11135-025-02157-z
11. European Commission (2021). *2030 Digital Compass: the European way for the Digital Decade*. https://cutt.ly/FeNVI0Wi
12. Fan, C., Mao, Q., Sun, J. *Does digital financial inclusion promote elderly consumption? An empirical test based on Chinese survey data*. Electron Commer Res (2024). https://doi.org/10.1007/s10660-024-09940-4
13. Fang, C., Chen, Z., Liao, X. et al. *Urban-rural digitalization evolves from divide to inclusion: empirical evidence from China*. npj Urban Sustain 4, 51 (2024). https://doi.org/10.1038/s42949-024-00187-4
14. Faton, C. Y, Nonvide, G., Chabossou, A. (2025). *Digital financial inclusion and the reduction of gender inequalities in Africa.* Discover Global Society. pp.3-25. https://doi.org/10.1007/s44282-025-00146-z
15. Faton, C.Y., Chabossou, A.F. *Effect of digital financial inclusion on household consumption in ECOWAS countries*. SN Soc Sci 4, 231 (2024). https://doi.org/10.1007/s43545-024-01014-4

16. Fisher, O.J., Fearnshaw, D., Watson, N.J. et al. *Promoting equality, diversity and inclusion in research and funding: reflections from a digital manufacturing research network*. Res Integr Peer Rev 9, 5 (2024). https://doi.org/10.1186/s41073-024-00144-w
17. Herrman H, Stewart DE, Diaz-Granados N, Berger EL, Jackson B, Yuen T. *What is resilience?* Can J Psychiatry. 2011 May; 56(5):258-65. DOI: 10.1177/070674371105600504. PMID: 21586191.
18. Hu, L., Sheng, D., Ni, G. et al. *Digital Financial Inclusion and Poverty-Alleviation Resilience of Chinese Rural Households*. J Fam Econ Iss (2024). https://doi.org/10.1007/s10834-024-09992-6
19. Inoue, T. *Digital financial inclusion, international remittances, and poverty reduction*. Economic Structures 13, 8 (2024). https://doi.org/10.1186/s40008-024-00328-z
20. Jia, X, Kanagaretnam, K., *Digital Inclusion and Financial Inclusion: Evidence from Peer-to-Peer Lending*, Journal of Business Ethics, Springer, vol. 196(2), pp. 345-380 (2025). https://doi.org/10.1007/s10551-024-05689-w
21. Kaarakainen, M.T., Saikkonen, L. Remark on digital accessibility: educational disparities define digital inclusion from adolescence onwards. Univ Access Inf Soc 22, pp.1279-1292 (2023). https://doi.org/10.1007/s10209-022-00908-5
22. Kamble, P.A., Mehta, A., Rani, N. *Financial Inclusion and Digital Financial Literacy: Do they Matter for Financial Well-being*?. Soc Indic Res 171, pp. 777–807 (2024). https://doi.org/10.1007/s11205-023-03264-w
23. Kim, Y., Jang, CY. *Evaluating Digital Inclusion: A Framework for Indexing Inclusive Progress*. Public Organiz Rev (2025). https://doi.org/10.1007/s11115-025-00857-6
24. Kouladoum, J.C; Muhamadu Wirajing, M.A.K, Nchofoung, T.N., *Digital technologies, Financial inclusion, Sub Saharan Africa,* Volume 46, Issue 9, October 2022, 102387. https://doi.org/10.1016/j.telpol.2022.102387
25. Kumari, D., Giri, A.K., Saruparia, C. *Role of gender-based digital financial inclusion and women empowerment in poverty reduction: evidence from Asian countries*. Discov Sustain 6, 283 (2025). https://doi.org/10.1007/s43621-025-01095-y
26. Liu, F., Yang, S., Zhou, Y. et al. *Does Digital Financial Inclusion Have an Impact on High-Quality Development of Trade? Evidence from China*. J Knowl Econ 16, pp. 788-816 (2025). https://doi.org/10.1007/s13132-024-02015-7
27. Mamun, A.Y., László, V. *Advancing sustainability through financial inclusion and sustainable finance: a systematic literature review*. Digit Finance (2025). https://doi.org/10.1007 /s42521-025-00142-7
28. Morte-Nadal, T., Esteban-Navarro, M.Á. *Recommendations for digital inclusion in the use of European digital public services.* Humanit Soc Sci Commun 12, 273 (2025). https://doi.org/10.1057/s41599-025-04576-7
29. Mwansa, G., Ngandu, M.R., Mkwambi, Z. *Bridging the digital divide: exploring the challenges and solutions for digital exclusion in rural South Africa*. Discov glob soc 3, 54 (2025). https://doi.org/10.1007/s44282-025-00189-2
30. Naveenan, R.V., Liew, C.Y., Kijkasiwat, P. *Nexus Between Financial Inclusion, Digital Inclusion and Health Outcomes: Evidence from Developing Economies*. Soc Indic Res 174, pp. 367-408 (2024). https://doi.org/10.1007/s11205-024-03391-y
31. Özşuca, E.A. *Gender gap in digital financial inclusion across generations*. Empirica 52, 197-210 (2025). https://doi.org/10.1007/s10663-024-09641-z
32. Shashwat, S., Chhabra, M., Giri, A.K. *Environmental Externalities of Digital Financial Inclusion: a Green Growth perspective*. Discov Sustain 6, 81 (2025). https://doi.org/10.1007/s43621-025-00862-1
33. Tomczyk, Ł., Kielar, I. *Neutralising External and Internal Barriers in the Digital Inclusion Process for Seniors - Finding Ways to Effectively Shape Digital and Media Competences among Older People.* Tech Know Learn (2025). https://doi.org/10.1007/s10758-024-09813-7
34. Van Dijk, J. (2017). *Digital Divide: Impact of Access*. In The International Encyclopedia of Media Effects, pp. 1-11. Wiley Online. https://onlinelibrary.wiley.com/doi/book/10.1002/9781118783764

35. Van, H.N., Le Quoc, D. *Assessing the Impact of Digital Financial Inclusion on Sustainable Development Goals: Analyzing Differences by Financial Development Levels Across Countries*. J Knowl Econ (2024). https://doi.org/10.1007/s13132-024-02515-6
36. Williams, B.A., Nagriwum, T.M. *Fostering Digital Inclusion: Understanding Generation Z's Reluctance to Support Older Adults in Liberia's Digital Public Services*. Public Organiz Rev (2025). https://doi.org/10.1007/s11115-025-00861-w
37. Wu, M., Zhang, Q., He, Y. *Inclusion or Exclusion: The Impact of Digital Finance on Intra-City Economic Inequality and Its Spatial Spillover Effect*. J Knowl Econ (2025). https://doi.org/10.1007/s13132-025-02668-y