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INNOVATION AND INCLUSIVITY FOR ECONOMIC DEVELOPMENT

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Purpose of the article: *this research explores the link between financial inclusion and financial innovation in selected European countries moderated by digital technology.*

Methodology: *FMOLS method generates consistent and reliable results in coefficient estimation of small samples. DOLS estimators give more effective results in models with small observations and heterogeneous structures*

Conclusions: *The widespread use of financial services will not entail an increase in financial innovation. The newcomers in the financial ecosystem are usually people who lack tech skills or financial literacy. In order to develop a positive connection between FINC and FIN, these factors (skills, literacy, security, personal data status/control, privacy etc.) must be addressed by the regulators at national and European levels.*

Originality: *The increased need for more sustainable development empowered the role of finance in guiding capital flows for activities that limit environmental degradation, improving the ability of future generations to benefit from the same living conditions.*

Keywords: *inclusion; innovation; financial development; digital technology; European countries.*
JEL classifications*: G20, O33,O52.*

INTRODUCTION

Innovation is the key element for development. Inclusion is also a key element in the path to development, if we want universal development rather than one based on disparities. Thus, the two elements represent the basis of economic and human development, leaving no one behind and improving the lives of all (Marcel Nuta et al., 2025).

Among the foundations of innovation, according to the literature, we can identify the education factor, technological development, and other factors related to shaping an economic and social environment favorable to the development of thinking and ideas.

Financial innovation is defined by the Financial Stability Board (2024) as technology-supported innovation that generates new solutions, processes, and applications closely related to the functioning of financial markets, financial services, financial relations, financial institutions, and regulations. From this perspective, financial innovation is closely linked to financial stability, and institutions with a regulatory and supervisory role supervise this relationship, so that these new models of this "new" element related to financial activity do not negatively affect the financial ecosystem, but improve the results of processes and activities in the financial landscape, including their use and interaction with consumers of financial products and services.

On the other hand, financial inclusion (Dodoo, et al., 2025; Nuta et al., 2024) is seen as a way of ensuring access to financial services and products, the way in which they are used, and of course aspects related to the cost or quality of these financial products and services by individuals and companies, according to World Bank (World Bank, 2025). The benefits of financial inclusion include economic equity, equal opportunities for businesses and individuals, sustainable development, economic growth, poverty reduction, and the sustainable influence across various aspects of socio-economic life. Inclusive and sustainable development is the main objective of all nations.

Additionally, when the topic of climate change is brought up, knowing that most adults who are not yet included in the financial system live in areas of maximum climate risk, the importance of this topic of financial inclusion is emphasized, and an acceleration of policies and decisions that lead to the intensification of financial inclusion at a global level becomes natural.

RESULTS AND DISCUSSION

The connection between financial inclusion and financial innovation is intensely discussed in the literature. The majority of works examine the role of financial innovation in promoting financial inclusion. The reverse connectedness has not got much attention. This paper addresses this gap in the literature by analyzing the impact of financial inclusion on financial innovation, considering that the expansion of users in the financial system could generate greater demand for money and financial products and services, which could also be offered using technology, thereby enabling innovative products.

Equitable access to financial services and products is especially discussed in the context of low-income countries, where access rate to financing for individuals and companies is limited. Moreover, it has been acknowledged that some disparities in women's access to financial products and services, despite recent developments, are another element that deserves attention.

The access issue differs from the usage, and this disequilibrium should also be considered, as the usage is the ultimate act of benefiting from inclusion in the financial ecosystem.

One of the most relevant indicators to offer a broader picture of the inclusivity-innovation matter in the financial system is the Global Findex, which measures the use and access to information, based on technology (World Bank Group, 2025).

An important aspect related to the usage of the internet refers to the types of activities these features are used for. Thus, according to Eurostat (2024), European Union households use the internet especially for communication purposes, and less for economic or educational activities, such as internet banking and taking e-learning courses. For example, in 2024, 85% of adult citizens used the internet for telephoning and video calls, 67% for internet banking, and only 17% for online learning.

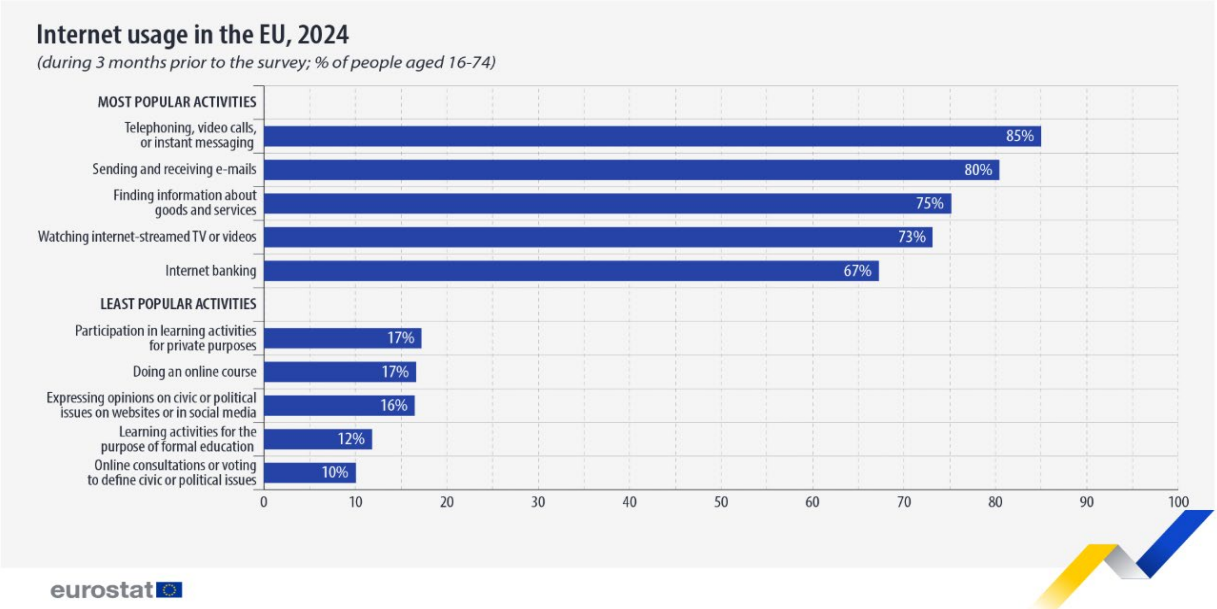


Figure 1. Internet usage in the European Union

Source:*https://ec.europa.eu/eurostat/databrowser/view/isoc_ci_ac_i__custom_14712317/bookmark/table?lang=en&bookmarkId=09ca270b-dfeb-4534-a18e-023576864443&c=1734341348717*

This pattern should be changed, and learning and online economic-based activities should expand within a more complex economic framework, in which user growth is expected (Alshaib et al., 2023). Information and communication technologies are expected to grow constantly alongside the expansion of artificial intelligence in everyone's lives, and the ultimate goal is to ensure these features help people in their activities and do not further deepen the chasm of disparities.

For countries with the least access to the internet, one should also note that the rural-urban divide remains, as shown in the Figure below.

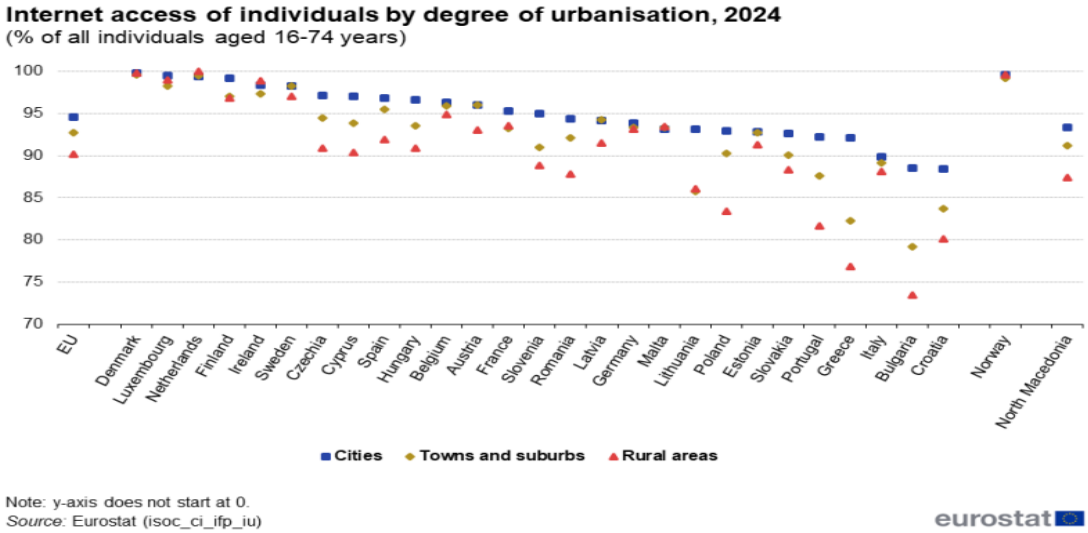


Figure 2. Internet access of adults in Europe

Source:[*https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals*](https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals)

For a better understanding of the possible advantages or disadvantages of using digital technology for economic and financial activities, education is pivotal. Financial literacy, as part of the continuous educational process, is a necessary instrument. Different authorities, such as banks, financial institutions, and universities, are increasingly involved in providing financial education, coordinating their efforts to achieve better outcomes. However, the efforts should continue, as one can observe in the next Figure:

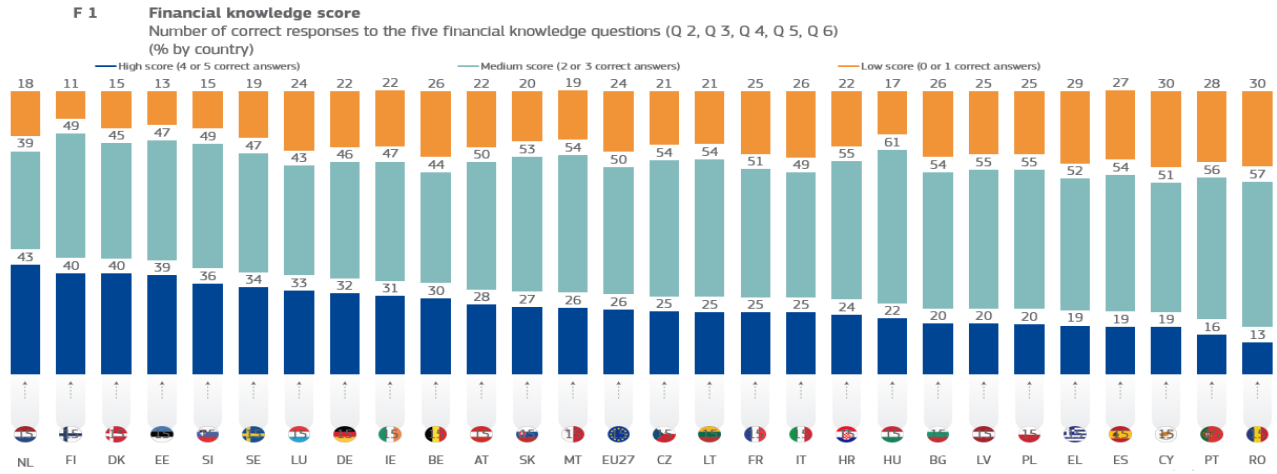


Figure 3. Financial inclusion in Europe

Source: [*https://europa.eu/eurobarometer/surveys/detail/2953*](https://europa.eu/eurobarometer/surveys/detail/2953)

According to the most recent Eurobarometer (Eurobarometer, 2023), only 18% of European Union adults have high levels of financial literacy (approached by this study by a mix of financial knowledge, financial behavior, and financial resilience-related questions). In this sense, there is a need for further improvements in these highlighted aspects, with special attention to including and expanding financial literacy among people with lower incomes, women, young people, etc. At the level of the European Union countries, knowledge and skills to choose the right financial product and make proper financial and economic decisions still need further improvement. In this sense, the European Commission is taking further steps for improving financial awareness levels across EU member states citizens by setting a Strategy (Eur-Lex, 2025) titled Savings and investments union meant for empowering citizens, consisting of improving their budget management, helping people to

protect from misinformation, optimizing saving and investment decisions (European Commission, 2025). However, as one can observe, some of these measures are not targeting the enhancement of people's financial education levels but rather the easing and simplification of the decision-making process by implementing new tools, such as savings and investment accounts (SIAs) (European Commission, September 2025).

A composite indicator published by the Joint Research Centre highlights Europe's image regarding its capacity to perform in innovation (JRC, 2024). And finance is a pivotal element in guiding capital flows with strong purposes (Nuta, 2025).

Comparisons of innovation performance in the European Union highlight an average position relative to its main competitors (European Commission, 2025).

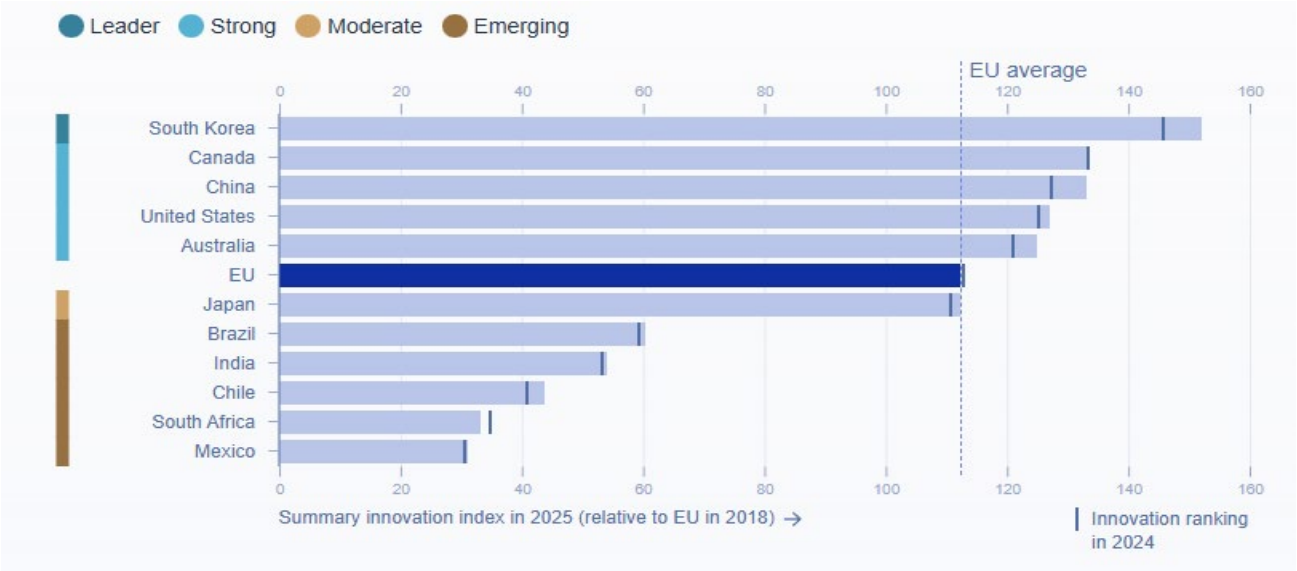


Figure 4. Innovation – a comparative approach

Source: European Commission: Directorate-General for Research and Innovation, European Innovation Scoreboard 2025, Publications Office of the European Union, 2025, https://data.europa.eu/doi/10.2777/3239776

CONCLUSIONS

Thus, additional actions to support innovation, both across European countries and at the EU level, are necessary, especially given that most innovative investments in Europe still come from outside the continent. In this sense, less fragmentation of the financial landscape in Europe, better harmonized regulation and integration, in addition to better-informed people with improved financial literacy and skills, will improve Europe's capacity to develop sustainably and be more inclusive.

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