Finanziato dall'Unione europea NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani
Finanziato nell'ambito del Piano Nazionale di Ripresa e Resilienza PNRR. Missione 4, Componente 2, Investimento 1.3 Creazione di "Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base"

GRINS FOUNDATION

GRINS – Growing Resilient, INclusive and Sustainable

"9. Economic and financial sustainability of systems and territories"

Codice Identificativo: **PE00000018**

Finanziato nell'ambito del Piano Nazionale di Ripresa e Resilienza PNRR

Missione 4 – Componente 2

Investimento 1.3 – Creazione di "Partenariati estesi alle università, ai

SPOKE 4

D4.2.2 – Policy briefs and best practices for financial inclusion and participation to EU Capital Markets

October 2025

Finanziato dall'Unione europea NextGenerationEU
Ministero dell'Università e della Ricerca
Italiadomani
UNIVERSITÀ DEGLI STUDI DI BERGAMO
GRINS FOUNDATION

Are Digital Finance Markets Inclusive? Evidence from Equity Crowdfunding Investors

Vincenzo Butticè*, Valerio Lo Monaco**, Benedetta Montanaro*, Silvio Vismara**

* Politecnico di Milano

** University of Bergamo

Executive summary

Digital finance has the potential to democratize access to entrepreneurial investment. The study examines 20,209 registered users on Italy's largest equity crowdfunding platform between 2016 and 2023 to assess whether participation in digital finance is inclusive across gender, ethnicity, age, and geography. The findings show that women and ethnic minority individuals are more likely to invest and contribute higher amounts than their counterparts, while younger individuals invest less. No significant differences emerge between rural and metropolitan investors, suggesting that digital access alone does not eliminate geographic barriers. These findings challenge the traditional assumption that online finance automatically attracts youth or urban users, and they indicate that digital finance can reduce, but not eliminate, structural inequalities in access to investment opportunities.

Introduction

Financial markets remain characterized by persistent inequalities. Women, ethnic minorities, and younger and rural individuals are traditionally underrepresented among investors due to financial, informational, and social barriers such as limited networks, higher perceived risk, and restricted access to intermediaries (Allen & Gale, 1994; Lusardi & Mitchell, 2007; Brown et al., 2008). Equity crowdfunding (ECF), a digital, open, and lower-cost equity market, offers an alternative to

these traditional finance channels (Ahlers et al., 2015; Cumming et al., 2021). Platforms publicly list early-stage investment opportunities, allowing individuals to invest small amounts without intermediaries. Italy represents a particularly relevant case: it was the first country to regulate ECF markets, providing a mature and comprehensive dataset for studying inclusiveness. This research examines who invests in digital finance markets, offering a new perspective on inclusivity in digital finance. By examining investors and how demographic factors shape their engagement, we assess whether the expansion of online investment channels is genuinely translating into broader access and participation. In doing so, the analysis tests whether the democratizing promise of digital finance markets.

Research Design and Data

Our study relies on the population of 20,209 individual users registered on the largest Italian equity crowdfunding (ECF) platform between May 2016 and December 2023. This unique data source allows us to observe who participates in digital investment markets, how much they invest, and which demographic factors influence their investment decision. Each observation corresponds to a single individual user who signed up on the platform. The dataset includes detailed, anonymized information on gender, age, geographic location, ethnicity, education level, professional background, and income range, as well as data on the day and amount of each investment.

We estimate two complementary outcomes. The first is a binary variable, equal to one if an individual invested at least once, and zero otherwise. The second measures the amount of the initial investment, expressed in thousands of euros. We employ a two-stage selection model with instrumental variables, implemented through a Bayesian framework using Markov Chain Monte Carlo (MCMC) estimation. The Bayesian approach is particularly well-suited to contexts where the sample may not perfectly represent the broader population, as it allows us to integrate prior information and explicitly model uncertainty. In the first stage, we estimate the probability that a registered individual becomes an investor. In the second stage, we model the size of the first investment, conditional on the decision to invest. Both stages control for a range of demographic and economic factors.

To identify the causal relationships, we use instrumental variables that influence the likelihood of investing but not the investment amount directly. These include broadband access at the regional level, which captures whether individuals tend to imitate the actions of others with similar demographic profiles who have recently invested. Because some groups are underrepresented, such as ethnic minorities or women, the model incorporates informative priors based on demographic data from professional investors—venture capitalists (VCs) and business angels (BAs). This step anchors the estimation in known population patterns and reduces bias from small sample sizes. We also conduct robustness checks using priors derived from national Italian demographic data and from diffuse, uninformative priors to ensure that results do not depend on prior assumptions. In Figures 1–4, we provide a graphical representation of the geographical distribution of Italian investors across provinces in Italy. These maps illustrate that the population in our analysis accurately represents the broader Italian population, in alignment with the demographics of interest, that is, gender, age, metropolitan areas, and ethnic minorities.

Overall, this research design combines a rich micro-level dataset, estimation, and multiple robustness tests. It allows us to move beyond descriptive comparisons and provide credible, data-driven evidence on how gender, age, geography, and ethnicity shape participation in digital investment markets.

Findings

Figure 1. Female investors. This figure shows active ECF female investors in Italy (2,345 obs..), over the map of NUTS-3 regions in Italy by the percentage of female residents (aged 18 and older).

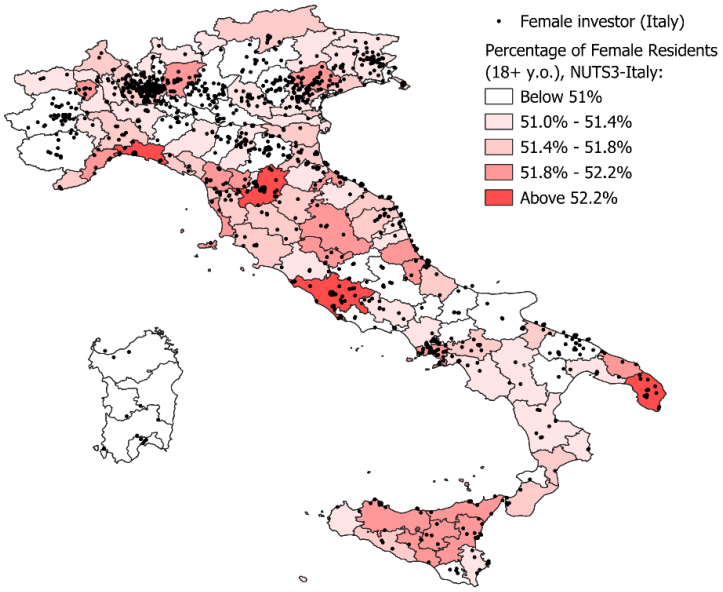


Figure 2. Young investors. This figure shows active ECF young investors in Italy, aged 30 and below, over the map of NUTS-3 regions in Italy by age of residents (aged 18 and older).

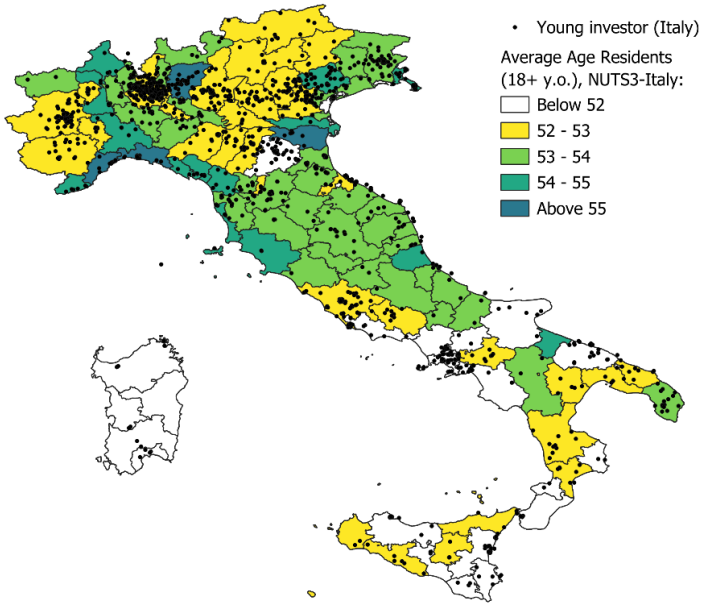


Figure 3. Investors in metropolitan areas. This figure shows active ECF investors in Italy, over the map of NUTS-3 regions in Italy by metropolitan area.

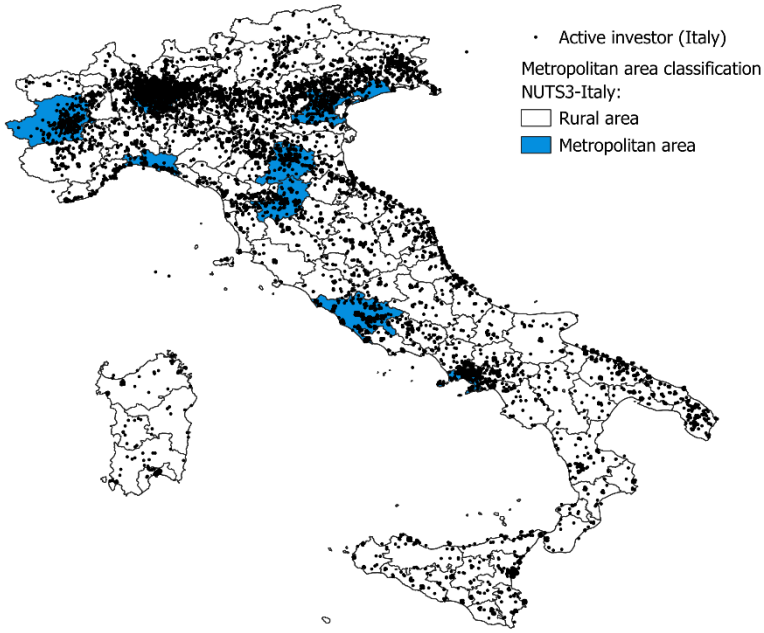
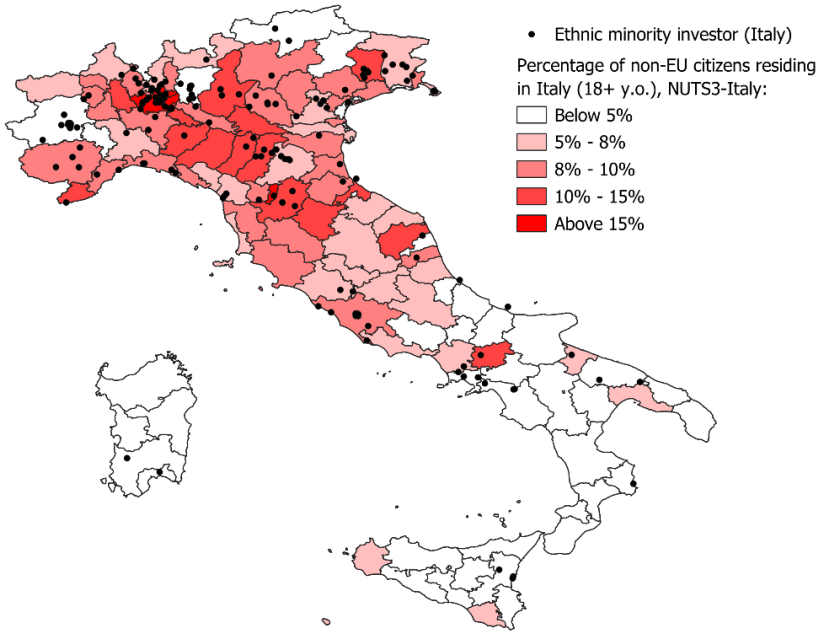


Figure 4. Ethnic minority investors. This figure shows active ECF ethnic minority investors, over the map of NUTS-3 regions in Italy, by the percentage of non-EU citizens residing in Italy (aged 18 and older).



Conclusions

Equity crowdfunding demonstrates significant progress toward inclusive digital finance. It provides a new entry point for women and ethnic minorities into early-stage investment, which is traditionally dominated by affluent, male, and metropolitan investors. However, our results show that youth and lower-income participation remain limited. Digital finance represents a necessary but insufficient condition for full inclusion. Its democratizing potential will be realized only if complemented by targeted policies, structural reforms, and continued monitoring of participation inequalities. By broadening investor access, digital equity markets can contribute to more resilient and inclusive financial ecosystems.

Acknowledgements

This study was funded by the European Union - NextGenerationEU, in the framework of the GRINS -Growing Resilient, INclusive and Sustainable project (GRINS PE00000018 – CUP F83C22001720001). The views and opinions expressed are solely those of the authors and do not necessarily reflect those of the European Union, nor can the European Union be held responsible for them.

References

Ahlers, G., Cumming, D., Günther, C., Schweizer, D. (2015). Signaling in Equity Crowdfunding. Entrepreneurship Theory and Practice, 39(4), 955-980. https://doi.org/https://doi.org/10.1111/etap.12157

Allen, F., & Gale, D. (1994). Limited market participation and volatility of asset prices. The American Economic Review, 84(4), 933–955.

Brown, J., Ivkovic, Z., Smith, P., & Weisbenner, S. (2008). Neighbors Matter: Causal Community Effects and Stock Market Participation. The Journal of Finance, 63(3), 1509-1531. https://doi.org/https://doi.org/10.1111/j.1540-6261.2008.01364.x

Cumming, D., Meoli, M., Vismara, S. (2021). Does equity crowdfunding democratize entrepreneurial finance? Small Business Economics, 56(2), 533-552. https://doi.org/https://doi.org/10.1007/s11187-019-00188-z

Lusardi, A., & Mitchell, O. (2007). Baby Boomer retirement security: The roles of planning, financial literacy, and housing wealth. Journal of Monetary Economics, 54(1), 205-224. https://doi.org/https://doi.org/10.1016/j.jmoneco.2006.12.001