Action number: CA19130
VM grant title: Title: *Data mining event to investigate gender diversity in financial inclusion*
VM grant start and end date: 03/10/2022 to 31/10/2022
Grantee name: Maria Iannario

1. Presentation of VMG

Increasing attention has been recently paid to assessing the financial competence of individuals and, more generally, to financial inclusion. The latter is key to reducing poverty and achieving inclusive economic growth. Indeed, when people can participate in the financial system, they are better able to start and expand businesses, invest in their children's education, and absorb financial shocks.

The data mining event organized by the University of Naples Federico II and the University of Tirana aimed to promote -through the involvement of the younger generation- the analysis of data in line with the Cost action FinAI (CA19130 – Fintech and Artificial Intelligence in Finance – Towards a transparent financial industry). The challenge required using quantitative approaches to obtain relevant results in the field of financial inclusion, using the Global Findex database (www.worldbank.org). The latter collects different financial characteristics for nationally representative samples from 144 worldwide countries.

Specifically, compiled using nationally representative surveys of more than 150,000 adults age 15 and above in over 140 economies, the 2017 Global Findex database includes updated indicators on access to and use of formal and informal financial services. It has additional data on the use of financial technology (or Fintech), including the use of mobile phones and the internet to conduct financial transactions.

By collecting detailed indicators about how adults around the world manage their day-to-day finances, the Global Findex allows policy makers, researchers, businesses, development practitioners and participants to the data mining event, in our specific case, to track how the use of financial services has changed over time. The database has been also used to identify gaps in access to the formal financial system and design policies to expand financial inclusion.

The VMG aimd at

- ✓ Focusing on financial inclusion through the direct participation of the next generation
- ✓ Analysing Fintech gender diversity in different EU countries
- ✓ Disseminating the results of the Action's activities to the scientific community, European institutions and to the general public
- ✓ Significantly improving the gender equality in the fields of the Action.

The project is in line with the COST19130 Action objectives:

➢ The project bridged the gap between academia and industry by working in research with real data and focusing on innovation.
➢ It encouraged young scientists/researchers to conduct authentic and serious research on the main themes of Action.
➢ It made the results of the Action activities available to the scientific community, the European institutions and the public (especially young people and their possible mentors).
➢ It significantly improved gender equality in Action areas.
➢ It promoted gender equality also in the Master and PhD students' groups, asking them to respect a balance of gender in the group
➢ It allowed demystifying or explaining possible gaps (including gender) through data analysis
➢ It improved the knowledge about financial inclusion among research institutions and infrastructures, businesses and other socio-economic actors
➢ It trained next generations, stimulating their creativity, enhancing their innovation capacities and boosting their employability in the long-term promoting their understanding of financial technology over financial inclusion

The project aimed to encourage young people to participate in a data analysis competition in which:

➢ Students and young researchers in the early stages of their careers access real data have carried out analyses by investing mainly in the creation of interactive data visualisation tools
➢ the participants prepared a presentation, in an international context, with competitors from all over Europe
➢ involved students prepared a scientific article on the main contents of the analysis for submission to a qualified scientific journal in the field

2. Main results/outcomes obtained

The VMG has provided and will continue to provide the following results:
• Full assessment of the Global Findex database improving numeracy and understanding of financial inclusion.
• A pre-treatment, a clinging of data and a robust analysis
• The available to the project members of the clean data-base and of the main analyses for the development of future studies and reflection

• The transformation in scientific papers of the two best report focusing on topics including gender diversity in Fintech corporate world, gender pay gap, or EU countries' differences.

• Presentation of results at the hybrid event of October 7. The meeting took place physically at the Department of Political Science, within Laboratory for Statistical Data Analysis and virtually on Microsoft Teams (code yc63gdv)

• Preparation and submission of papers to scientific journals (by October 31)

Below is the title and abstract of the best work

Fintech gender diversity in different EU countries

The paper focuses on 'Fintech gender diversity in different EU countries'. It is based on data from a survey conducted in 2017 by Gollup, Inc. on almost 150,000 individuals in 144 economic realities. In particular, the focus is on EU member countries. With the aim of studying the gender gap for each EU country, it considers whether women have an account with a financial institution and which variables have a significant effect on this. The statistical methodology adopted refers, in the context of generalised linear models, to the binomial model with logit link. This study shows that aspects such as gender, age, country of origin and payment instruments are significant in explaining the phenomenon in the European context.

Keywords: Logit model, gender gap, odds, ROC curve, classification table

Study of gender diversity in opening an account at the financial institution

In the face of the intricate tasks that many women continue to perform at home, some otherworldly roles are still neglected by women. Opening an account and managing one's finances at a financial institution is one of them. In the current situation, where we are working to eradicate the term 'gender-specific roles' from society, it is of utmost importance to understand whether a gender gap exists, its causes and how to close it. In this article we examine the Global Financial Inclusion (Global Findex) Database 2017, the most comprehensive data set available on how adults manage risk, save, borrow and make payments. Over 150,000 people in 144 economies - or more than 97% of the world's population - were surveyed for the indicators in the Global Findex Database 2017. The target population is the entire non-institutionalised civilian population aged 15 years and older. Our research focused on understanding whether gender influences who is more likely to have an account with a financial institution or not. To this end, we use appropriate statistical models. The gender gap is then examined in relation to various factors such as region, age and education.

Keywords: Binary data model, gender gap, Fintech

Additionally, the VMG proposal fitted in the Excellence and Inclusiveness policy by providing a virtual and real space for collaboration among students, young and senior researchers in terms of gender, nationality, stage of career and age.

The results provided more insight on the gender differences in knowledge and use of Fintech tools and will tackle a very relevant policy issues, such as financial education, numeracy, STEM diffusion and female financial, included in the UN SDG as a key enabler for an ordered and sustainable growth.

Table 1. Main activities

Activity	Date	End of act.
Preparing the data mining presentation day	October 3 – 6, 2022:	✓
Presentation day	October 7, 2022:	✓
Meeting to discuss the paper about *Fintech gender diversity in different EU countries*	October 11, 2022 · 8:15 – 8:45am Google Meet joining info Video call link: https://meet.google.com/hkv-fjof-khb	✓
Meeting to discuss the paper *Study of gender diversity in opening an account at the financial institution*	October 11, 2022 · 9:10 – 10:10am Google Meet joining info Video call link: https://meet.google.com/vxi-zihg-usy	✓
Meeting to discuss the paper *Fintech gender diversity in different EU countries:* comments about implementation of the analyses	October 19, 2022 · 9:30 – 10:30pm Google Meet joining info Video call link: https://meet.google.com/rqj-jmrx-vfk	✓
Meeting to discuss the paper *Study of gender diversity in opening an account at the financial institution*: comments about implementation of the analyses	October 20, 2022· 8:00 – 8:30am Google Meet joining info Video call link: https://meet.google.com/mgy-gqvr-zjy	✓
Meeting to discuss possible journal in which to make the submission	October 25, 2022	✓
Meeting on the future. Possible scenarios and activities to be planned to continue the dissemination and involvement of young people.	October 25, 2022 . 11:30-12:00 Zoom joining info Video call: link: https://us02web.zoom.us/j/87180414994? pwd=UVp0RXYzTFJLWUNEYXN4cHhkQ1czQT09	✓