Financial Resilience: The Financial Capability and Income Inequality matter?

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Abstract

With the decline in global economic conditions in recent years and its negative impact on the financial conditions of individuals, it has become increasingly important to assess their ability to cope with these constraints−in other words, their financial resilience. This study draws on attributes of Sherraden's financial capability model as a driving framework to examine how certain elements of personal financial capability contribute to financial resilience. For this purpose, individual-level data of 10,245 respondents from 10 countries were used from the 2020 OECD/INFE International Survey of Adult Financial Literacy. The results show a positive impact of financial literacy, financial inclusion, and socialization on financial resilience. However, important differences were found in estimating those effects for different approaches to financial resilience. The findings also indicate the importance of income inequality and differences between developed countries and economies in transition.

Keywords: Financial literacy, Financial Inclusion, Financial Resilience, Income Inequality, Socialization.

1. Introduction

In the last two decades, the global economy has been hit by several significant occurrences such as the economic and financial recession, in 2008-2009, the sovereign debt crises in the Eurozone, in 2011-2012, and the COVID-19 global pandemic, in 2020 (Dua & Tuteja, 2023). Emergent financial vulnerability and financial crises need a deep and active response as, progressively, individuals face several (i) individual financial crunches as a job loss, divorce, gambling debt, medical debt, or home foreclosure, or (ii) contextual financial instability, as the declining real wages, increasing income volatility, and growing financial unpredictability (Jones & Tanner, 2017; OECD, 2021; Birkenmaier et al., 2022**).**

To overcome the individual vulnerabilities that result from exposure to risk and lack of access to proper resources, it is important to analyze the individual's capacity to deal with them, that is their financial resilience (FR). The OECD/INFE 2020 International Survey of Adult Financial Literacy (OECD, 2020), concluded that individuals from different countries have limited FR: one-third of the individuals surveyed reported only having a financial cushion for about one week; almost half are worry about meeting their everyday living expenses and concerned about their financial situation. These results also show that a substantial proportion of those individuals surveyed experience financial stress and worry about money matters on a regular basis. The results of the OECD/INFE 2023 International Survey of Adult Financial Literacy (OECD, 2023) also came to similar conclusions: a little more than half would be able to pay a month's expenses without resorting to some form of financial assistance; only almost half could shelter their living overheads for at least three months if they lost their main source of income.

Accordingly, the concept of FR has received growing raised thoughtfulness in recent years. **Following Muir et al. (2016) and Salignac et al. (2019), FR can be defined as the**

ability of individuals the count on their internal and external resources throughout an adverse distress. Internal resources refer to an individual's capacity in managing their finances and external resources to the individual's ability to rely on family, friends, or other form of social support during a financial shock (Hamid et al., 2023). These is, (i) internal capabilities such as financial knowledge and skill, or improved ability to act, and (ii) external capabilities as access to financial products and services, or improved opportunity to act are each important, but may also intermingle in ways that make the combination more valuable than the sum of its parts (Nussbaum, 2000).

Salignac et al. (2019) developed a framework to understand the notion of FR based on four concepts: economic resources, financial products and services, financial knowledge and behavior, and social capital. These concepts are related to Sherraden's Financial Capability framework. Sherraden's (2010) financial capability framework includes several factors that impact individual financial capability manifested by actions and behaviors which lead to financial stability, well-being, and development (Anvari-Clark & Ansong, 2022; Birkenmaier et al., 2022; Sherradens, 2010). Individuals' ability to act in their own best financial interest is given by their socioeconomic and environmental conditions, which include financial knowledge, behaviors, and attitudes in managing financial resources (Fu, 2020), access and use of financial services (Anvari-Clark & Ansong, 2022; Fu, 2020; Sherraden, 2013), and socialization opportunities (Anvari-Clark & Ansong, 2022; Curran et al., 2018).

Financial capability would require that a person have internal capabilities, or the **ability to act**, in the form of knowledge and skills, and benefit from external conditions that allow them to exercise these abilities, the **opportunity to act**, is the access and use of financial services and socialization (Johnson & Sherraden, 2007). Merging products, socialization, knowledge, and opportunities, ultimately lead to financial capability (Sherraden, 2013). **So,**

concept of financial capability is related to the concepts of Financial Literacy (FL), Financial Inclusion (FI), and Socialization.

According to Birkenmaier et al. (2022), Financial Capability is a recent concept and is still evolving as scholars begin to empirically demonstrate the framework and propose improvements that can be tested. **So, more research on financial capability is needed to help individuals with their personal finances. Therefore, this research squares from attributes of Sherraden's financial capability framework (2010) as a driving context to analyze how specific aspects of personal financial capability led to FR.** Also based on Birkenmaier et al. (2022), most research studies on financial capability measures were operationalized as the combination of objective financial knowledge and financial access and few have included measures of socialization. **This research intends to fill this gap and ask how financial literacy, financial inclusion, and socialization influence financial resilience**.

Data from the OECD/INFE 2020 were analyzed and the sample spans 10 countries, in which 10,245 respondents were surveyed. An ordinary least squares (OLS) regression was performed, and additional analyses were accomplished. Robustness checks are also conducted for two different populations to identify heterogeneities. Besides, the moderator effect of country income inequality was also analyzed.

The key findings and implications from the paper's analysis are as follows. First, FL, FI, and Socialization impact on FR, giving relevance to the Sheradens's Capability framework and its relationship with FR behaviors. The ability to act in the form of an individual capacity to understand, evaluate, and make informed decisions about financial matters, and the opportunity to act in the form of use and access to formal financial services enhances the individual's FR. The results of socialization, measured by access to some kind of media resource, shape the individual's behavior towards control and planning individual finances,

expenses financial scams, and fraud. Second, we also found evidence that individual level of FR varies across country income inequality and its cross-level effect on the relationship between FL, FI, and Socialization. Third, we obtained interesting findings when we depicted the dependent variable in six elements: (i) keeping control over money, (ii) taking care of expenditures, (iii) availability of a financial cushion, (iv) coping with a financial shortfall, (v) planning individual finances, and (vi) fraud awareness. We found evidence that the impact of FL, FI, and Socialization on FR depends on the individual resilience behavior. Fourth, the research emphasizes the importance of sociodemographic factors in controlling the relationship between FL, FI, Socialization, income inequality, and FR.

Our paper is organized as follows: Section 2 discusses relevant literature. Section 3 introduces the data and methodology. Sections 4 and 5 present and discuss the results, respectively. Section 6 concludes, elaborating on policy implications, limitations, and lines for further research.

2. Background and hypotheses development

This study draws from attributes of Sherraden's financial capability framework to examine how certain elements of personal financial capability eventually steered to financial resilience (FR). Sherraden's theory of financial capacity highlights the idea that wealth and assets should not be exclusive to a privileged part of society but should be accessible to all people, regardless of their economic background. This is seen as an opportunity to fight inequality and promote financial stability and general well-being (Anvari-Clark & Ansong, 2022). Sherraden's financial capability theory is rooted in the belief that access to financial assets can empower people to break out of the cycle of poverty, make better and more informed decisions about money, and experience greater economic stability over time (Johnson & Sherraden, 2007). In this sense, Financial Capability expects the **ability to act** in the form of knowledge, skills, confidence and

motivation and the **opportunity to act** via access to useful financial products and institutions (Sherraden, 2010; Birkenmaier et al., 2022). Individuals must have basic analytic internal capabilities (ability to act) to benefit from favorable external conditions (opportunity to act) (Nussbaum, 2020).

So, this theory is based on the fact that individual's ability to act in their own best financial interest is given by their socioeconomic and environmental conditions, which includes **financial knowledge, behaviors, and attitudes in managing financial resources** (Fu, 2020), **access and use of financial services** (Anvari-Clark & Ansong, 2022; Fu, 2020; Sherraden, 2013), **and socialization opportunities** (Anvari-Clark & Ansong, 2022; Curran et al., 2018). In this sense, the concept of Financial Capability encompasses the concepts of Financial Literacy (FL), Financial Inclusion (FI), and Socialization. Also, based on Sherraden (2013), the environmental circumstances in which an individual may find himself and the social and economic structures incorporate the financial capability theory. So, individual socio-demographic characteristics and the context in which he is inserted are also relevant for the analysis of individual financial capability.

FR can be understood as the individual availability of appropriate resources and the ability to mobilize them to resist, deal and recover from negative financial shocks (Mcknight & Rucci, 2020; OECD, 2021). According to Sakyi-Nyarko et al. (2022) FR refers to an individual's capacity to handle harmful economic effects, specifically, the unexpected ones.

Financial capability can enhance FR through developing financial knowledge, access to savings and credit, and raised financial decisions and behaviors. Individual FR differs based on the disposal of proper resources and the capacity to use them to face a negative financial shock (OECD, 2021). **So, the concepts that encompass Sherraden's financial capability model, as FL, FI, and socialization are related to the individual FR.**

FR can be defined as the individual capacity to overlap financial adversities relying on internal abilities and external resources (Salignac et al., 2019). Jayasinghe et al. (2020) and Salignac et al. (2019) conceptualized FR across four concepts: (i) economic resources, (ii) financial products and services, (iii) financial knowledge and behavior, and (iv) social capital. **Economic resources** include income, savings, debt management, and the capacity to sustain the cost of living fees and improve funds in a crisis, this is the **demand or use of financial services**. Financial products and services are related to **access or supply of financial services**. These two concepts (economic resources and financial products and services) are linked to **financial inclusion** (FI): what products and services are available and if an individual chooses to utilize them. Financial knowledge and behavior are linked to the **financial literacy** (FL) concept. **Social Capital** includes individual social connections, access to social support in time of crisis, and access to community and government support when needed (Muir et al. 2016). Individuals grasp from their environment what they observe and experience (Sherraden, 2013).

According to OECD (2020), FR is composed of six elements: (i) keeping control over money, (ii) taking care with expenditures, (iii), availability of a financial cushion, (iv) coping with a financial shortfall, (v) planning individual finances, and (vi) fraud awareness. Actions to avoid indebtedness as planning and recording expenses, having a budget and ensuring that costs do not exceed profits, the availability of savings, having financial goals, the frequency of facing a shortfall, and being aware of financial scams and possible fraud are all characteristics that are related to FR (OECD, 2020).

2.1. Financial Literacy and Financial Resilience

Financial literacy (FL) refers to people's ability to understand, evaluate, and make informed decisions about financial matters (Klapper & Lusardi, 2020; OECD, 2023). This involves understanding basic financial concepts such as budgeting, saving, investing, borrowing,

interest, taxes, and planning for retirement (Birkenmaier et al., 2022). FL also includes the ability to critically analyze financial information, assess risks and rewards, and make decisions that are aligned with individual and family financial goals (OECD, 2021). When people are not financially literate, they are more vulnerable to economic hardship. Individuals need to have the appropriate financial knowledge and perception to make the best use of their financial resources (Banthia & Dey, 2022). Considering the multiplicity of financial products and providers existing and the complexity of the financial market, individuals must have skills to make informed financial decisions (e.g., buying a house, retirement, starting a business), this is adequate financial knowledge (Sherraden, 2010). FL is acknowledged as a fundamental mechanism for fostering financial awareness: knowledge, skills, attitudes, and behaviors required for individuals to successfully access and use these services (Kass-Hanna et al., 2022; OECD, 2023).

In this sense having higher levels of FL is needed to support financially resilient behaviors as having budgeting plans, avoiding dropping into debt tricks, forestalling future needs and unpredicted expenses, choosing insurance and credit according to their needs and conditions, diversifying investments, and avoid awareness about common financial fraud and scams (OECD, 2021). Individuals with greater financial knowledge and major financial management skills show higher ability to act which means that they are more likely to make good financial decisions (Sherraden, 2010).

Several authors have studied the impact of FL on FR. For example, Klapper and Lusardi (2020), concluded that if people lack the knowledge to effectively use financial skills, this is low FL levels, and individuals' risks increase as progressively complex and diversified financial tools enter the market. Kass-Hanna et al. (2022), who investigated the relationship between financial and digital literacy and resilience-building financial behaviors for seven developing economies in South Asia and Sub-Saharan Africa, concluded that they are positively related.

Fernandes, Lynch, and Netemeyer (2014) conducted a meta-analysis, finding strong and positive relationships between FL and financial behaviors. As such, we predict the following hypothesis:

H1: Individual Financial Literacy has a positive impact on Individual Financial Resilience.

2.2. Financial Inclusion and Financial Resilience

Financial inclusion is about equitable access and participation of people in the financial system (Tinta et al., 2022). This involves ensuring that everyone can use and have access to basic financial services, such as bank accounts, loans, insurance, and investments, in an affordable and secure way which are key to accumulating assets and savings. Financial inclusion seeks to remove barriers that prevent certain groups from accessing the benefits of the financial system. So, it can be considered as an enabling factor for FR (Jayasinghe et al., 2020; OECD, 2021; Tinta et al., 2022) as it allows protecting against negative economic shocks, reducing vulnerabilities and provides a safeguard against adversities (Lyons et al., 2020; Sakyi-Nyarko et al., 2022). Savings accounts, loans, and insurance can allow individuals to make more strategic riskier, and higher return investments which could lead to growth in future income, savings and credit can assist as informal insurance mechanisms and facilitate preparedness for shocks, basic financial services could be an answer when an adverse event happens (OECD, 2021; Kass-Hanna et al., 2022).

For instance, Sakyi-Nyarko et al. (2022) studied the differences between the household financial resilience of financially included individuals and that of financially excluded individuals in Ghana concluding that financially included individuals are roughly 44 percent more likely to be financially resilientThe use of financial services such as insurance, loans, and savings accounts can boost individuals to advance in health and education and participate in high-risk activities with high possible earnings (Cole et al., 2017). Concerning, more inclusive

financial systems allow individuals to save, borrow, foster assets, shelter alongside risk, and thus reach resilience. In this sense, we formulated the following hypothesis:

H2: Individual Financial Inclusion has a positive impact on individual Financial Resilience

2.3. Socialization and Financial Resilience

Socialization is related to cognitive, behavioral, and environmental influences that have impact on individual financial knowledge (Sherraden, 2010). Individuals attain values, attitudes, standards, norms, knowledge, and behaviors from their environment across a process of socialization which will influence their financial decisions (Schuchardt et al., 2009, Gudmunson & Danes, 2011). Furthermore, individual network of relationships gives individuals access to information, guidance, and support lowering stress and raising adjustment under shifting environmental conditions (Salignac et al, 2019; Norris, 2010).

The agents of economic socialization are the different institutions, groups, and influences as family, formal education, media, friends, peers, and community (OECD, 2021; Birkenmaier et al., 2022; LeBaron-Black et. Al, 2023). They shape people's attitudes, values, knowledge, and behavior towards economics and finance. They play a key role in shaping people's understanding of money, work, consumption, savings, investment, and other economic issues. These agents of economic socialization interact with each other and play a collective role in shaping people's financial beliefs and behaviors. Each agent contributes to a person's overall understanding of the economy and finance, shaping their ability to make informed and responsible decisions on economic matters.

Studies firstly focus on children and their families as primary socializing agents (e.g., Beutler & Dickson, 2008; Solheim et al., 2011). More recently, research has strengthened in identifying the impact of parental financial socialization on the financial capability of emerging adults (Kim & Chatterjee, 2013; Drever et al., 2015). Other studies highlight the role of media

as an agent of financial socialization (e.g., Carson, 2014). Individuals face a diverse and complex media environment and are substantially dependent on the internet/social media as their major news source.

For instance, an individual's set of connections of interactions can improve their well-being at times of financial adversity (Richards, 2016). Furthermore, the set of connections can enhance the role of social capital as a resilience resource (Muir et al., 2016). In this vein, LeBaron-Black et al. (2023) analyzed the associations between the perceived influence of parents, peers, employment, and media and spending behaviors of emerging adult college students from different regions of the US and they concluded that better parental and employment were linked with more responsible spending behaviors while greater peer and media influences were associated with less responsible spending behaviors. In this sense, we formulated the following hypothesis:

H3: Socialization has a positive effect on Individual Financial Resilience.

2.4. Country Income Inequality and Financial Resilience

Higher income economies usually show higher levels of globalization. However, the benefits of economic integration may not be equal to national income levels (Huh & Park, 2021). The relationship between financial development and income inequality is dynamic: despite the financial systems have the potential to promote the inclusion of marginalized individuals to participate in economic activities, there are concerns about individual access to credit and investment opportunities which could lead to higher income inequality. Social and economic inequalities are frequently external to the person's control, individuals could not have access to these resources on an identical root (Salignac et al., 2019). The ability to take advantage of new investment opportunities may help reduce inequality. However, since financial markets become

more and more sophisticated, Prete (2013) concluded that the relationship between financial development and lower income inequality is driven by economic literacy.

For instance, Asongu et al. (2020) and Van et al. (2021), studied the impact of FI and financial development on income inequality in Africa and Asian countries, respectively, and they found that FI and financial development can reduce income inequality. Demir et al. (2022) concluded that FI significantly reduces inequality mainly in higher-income countries. In the same vein, Kim (2016) found that FI turns the negative relationship between income inequality and economic growth into a positive one. According to Jaumotte et al. (2013), during a financial crisis, income inequality tends to occur because poor and middle-class households are disproportionately affected due to their limited access to credit and low ability to withstand shocks.

In the scope of FL, Lusardi, and Mitchell (2014) found that higher levels of FL could reduce income inequality as it ensures more equitable benefits from financial development. Oliver-Márquez et al. (2022) conducted a study of 63 countries over the period 2008–2014 and concluded that an increase in financial knowledge could decrease income inequality when shrinking from low levels of financial knowledge. So, the literature suggests that the importance of individual Financial Literacy, Financial Inclusion, and Socialization for individual Financial Resilience will be stronger for individuals living in countries with lower income inequality. In this sense, we formulated the succeeding cross-level hypotheses:

H4a: Income inequality moderates the positive relationship between FL and FR. As income inequality decreases, the positive effect of FL on FR increases.

H4b: Income inequality moderates the positive relationship between FI and FR. As income inequality decreases, the positive effect of FI on FR increases.

H4c: Income inequality moderates the positive relationship between Socialization and FR. As income inequality decreases, the positive effect of Socialization on FR increases.

Based on the above background we developed the following conceptual framework. Firstly, we would like to confirm whether FL, FI, and Socialization influence FR controlling the effect of social demographic variables on FR. Lastly, we would like to consider the cross-level effect of country income inequality between FL, FI, and Socialization on FR.

[Insert Figure 1 about here]

3. Data

The individual-level data used in this study has been extracted from the 2020 OECD/INFE International Survey of Adult Financial Literacy.[1] The OECD/INFE is an international survey developed by the OECD, that includes 26 countries and economies in Asia, Europe, and Latin America. Our research draws on data from 10 countries,[2] including 6 developed countries (Bulgaria, Croatia, Estonia, Hungary, Poland, and Romania,), and 4 economies in transition (Georgia, Moldova, Montenegro, and North Macedonia)[3], corresponding to 10,245 observations. Table 1 describes the variables and source.

[Insert Table 1 about here]

3.1. Dependent Variable: measurement and descriptive statistics

Concerning the dependent variable, FR, we followed the OECD/INFE 2020 definition. We computed respondents' FR scores according to six elements: (1) keeping control over money

[1] OECD/INFE 2020 International Survey of Adult Financial Literacy. Retrieved from the OECD website: www.oecd.org/financial/education/launchoftheoecdinfeglobalfinancialliteracysurveyreport.htm (accessed: July 2022).
[2] Although the OECD/INFE data include 26 countries, because of restrictions on data availability (e.g., individual resilience), we consider only 10 countries.
[3] We retrieved country classifications from World Economic Situation and Prospects 2023 (United Nations, 2023), available at https://www.un.org/development/desa/dpad/publication/world-economic-situation-and-prospects-2023/.

(0–1), (2) taking care of expenditures (0–2), (3) availability of a financial cushion (0–1), (4) ability to cope with a financial shortfall (0–4), (5) planning of personal finances (0–1), and (6) fraud awareness (0–9). Thus, FR varies from 0 to 18 (see Online Resource 1for more details). Measured FR is found to be low within our country sample. We observe a mean composite index score of 11.7, with a standard deviation 3.8 across the full sample. Considering developed countries and economies in transition the FR mean score is 11.5 and 12.1 with a standard deviation of 4.3 and 3.1, respectively. Croatia, Estonia, and Hungary have the highest FR mean scores (13), whereas Bulgaria reports the lowest value (5). Tables 2 and 3 present sample composition and summary descriptive statistics.

[Insert Table 2 about here]

[Insert Table 3 about here]

Another way to better understand Financial Resilience as a construct is to draw on descriptive approaches used in popular science such as age. In this sense, we split our data into age cohorts of 18-29 (Age1), 30-59 (Age2), and age 60 or more (Age3). The FR mean score is 11.7, 11.9, and 11.3 for Age1, Age2, and Age3, respectively, showing no major differences, with a standard deviation of 3.9 for Age1, 3.7 for Age2, and 4 for Age3.

3.2. Explanatory variables: measurement and descriptive statistics

The survey data covers a range of individual-level predictors of FR, including FL, FI, Socialization, and a set of sociodemographic variables. For the sake of brevity, we provide details on the construction of our indexes in Online Resources 2-4.-

The FL was computed using the methodology developed by OECD/INFE 2020[4]. The FL score is a derived value that ranges from 1 to 21 and is a sum of three scores: (1) Financial

[4] For more details, see *OECD/INFE Toolkit for Measuring Financial Literacy and Financial Inclusion* (2018), available at https://www.oecd.org/financial/education/2018-INFE-FinLit-Measurement-Toolkit.pdf.

Knowledge (0–7), (2) Financial Behaviour (0–9), and (3) Financial Attitude (1–5). Tables 2 3 show a mean composite score for FL of 12.3, with a standard deviation of 3.1 across the full sample. Regarding developed countries, the mean value is 12.5 and the standard deviation is 3.1. For economies in transition, the mean value is 12.1 and the standard deviation is 3. Romania displays the lowest mean score (11.3) and Estonia the highest mean score (13.8) (see Table 2).

The FI score reflects a multidimensional approach that accounts for whether a respondent currently holds a(1) payment product, (2) savings, investment, or retirement product, (3) insurance, and (4) credit product, as well as whether consumers (5) are aware of five or more products and services available, (6) have made any recent financial product choices, and, finally, (7) the extent to which respondents may also have turned to family and friends to provide services that the financial sector could provide We computed FI scores according to the sums of these seven elements, they range from 0 to 7. The mean score for FI is 3.4 with a standard deviation of 1.6. For developed countries and economies in transition, the mean value is 3.6 and 3.0 and the standard deviation is 1.6, respectively. Croatia, Estonia, Poland, and Montenegro have the highest mean score (4), and Moldova has the lowest (2) (see Tables 2 and 3).

Respondents' socialization scores were calculated according to their access to some kind of media in the last 7 days as (1) reading a magazine, (2) reading a newspaper, (3) listening to the radio, (4) using a computer, (5) accessed to the internet, (6) sent or received an email, (7) watched TV,(8) used a mobile phone, and (9) played a game on an electronic device. The result is the sum of those elements, so it ranges from 0 to 9. Results show an overall Socialization score indicating a mean of 5.5 and a standard deviation of 2.3. The mean value for developed countries is 5.8 and the standard deviation 2.2. For economies in transition, the mean value is 4.91 and the standard deviation is 2.3. Georgia has the lowest mean score (4) and several

countries such as Croatia, Estonia, Hungary, Montenegro, Poland, and Romania the highest (6) (see Tables 2 and 3).

The OECD/INFE 2020 is also rich in demographic variables. To control for individual Fl, FI, and Socialization, we used a set of sociodemographic variables, specifically gender, age, rural/urban, education level, and employment status. Of those surveyed, 45.3% were men, and 5,807 respondents were ages 30 to 59 years yold;3,681 respondents lived in a village, hamlet, or rural area (fewer than 3,000 people); 63.4% had secondary education; and 7.2% had less than secondary education, 29.2% of respondents had tertiary education level; 5,177 of respondents were employed, 1,140 self-employed, 1,404 not working, 389 were students and 2,191 retired (see Table 3).

GINI was used to measure the cross-level effect of country income inequality between FL, FI, and Socialization on FR and was extracted from the World Bank.[5] It ranges from 0 to 100, where 0 represents perfect equality and 100 represents perfect inequality. It shows a mean score of 32.5 and a standard deviation of 4. Considering developed countries and Economies in transition the results are the same. Moldova shows the lowest income inequality (26) and Bulgaria the highest (40.3) (see Tables 2 and 3).

3.2. Method

To analyze predictors of Financial Resilience (FR) we use an ordinary least squares (OLS) regression model approach applying the composite FR index score as the main dependent variable and Financial Literacy (FL), Financial Inclusion (FI), and Socialization as explanatory variables. We also control for a range of sociodemographic variables. The regression model estimated takes the form:

[5] https://data.worldbank.org/indicator/SI.POV.GINI (accessed on July 2024).

$$FR_{ir} = \alpha + \beta_1 FL_{ir} + \beta_2 FI_{ir} + \beta_3 Socialization_{ir} + \theta GINI_r + \sum_{j=1}^{J} \gamma_j X_{j_{ir}} + \varepsilon_{ir} \quad (1)$$

where Greek letters denote parameters, *i* and *r* are individual- and country-indices, respectively, and observable variables are as defined previously: *FR*− Financial resilience; *FL*−Financial literacy; *FI*−Financial inclusion; *Socialization*− Socialization; *GINI*−GINI index; (X_j, $j = 1, \ldots, J$—vector of sociodemographic characteristics including age, gender, urban/rural, education level, and employment status. $\mathcal{E}_{ir}$ is error term.

To measure the cross-level effect of country income inequality between FL, FI, and Socialization on FR the regression model estimated is therefore extended to the forms:

$$FR_{ir} = \alpha + \beta_1 FL_{ir} + \beta_2 FL_{ir} * GINI_{ir} + \theta GINI_r + \sum_{j=1}^{J} \gamma_j X_{j_{ir}} + \varepsilon_{ir} \quad (2)$$

$$FR_{ir} = \alpha + \beta_1 FI_{ir} + \beta_2 FI_{ir} * GINI_r + \theta GINI_r + \sum_{j=1}^{J} \gamma_j X_{j_{ir}} + \varepsilon_{ir} \quad (3)$$

$$FR_{ir} = \alpha + \beta_1 Socialization_{ir} + \beta_2 + \theta GINI_r + \sum_{j=1}^{J} \gamma_j X_{j_{ir}} + \varepsilon_{ir} \quad (4)$$

$$FR_{ir} = \alpha + \beta_1 FL_{ir} + \beta_2 FL_{ir} * GINI_r + \beta_3 FI_{ir} + \beta_4 FI_{ir} * GINI_r + \beta_5 Socialization_{ir} + \\ + \beta_6 Socialization_{ir} * GINI_r + \theta GINI_r + \sum_{j=1}^{J} \gamma_j X_{j_{ir}} + \varepsilon_{ir} \quad (5)$$

where, FL*GINI, FI*GINI, and Socialization*GINI denote the cross-level interactions between Financial Literacy, Financial Inclusion, and Socialization and Income Inequality (measure by GINI index), respectively.

4. Results

4.1. Correlation analysis

Table 4 depicts the correlation matrix. The FR score shows significant ($p < 0.01$) and positive correlations with FL [*Corr*(FR, FL) = 0.265], FI [*Corr*(FR, FI) = 0.273], and Socialization [*Corr*(FR, Socialization) = 0.265]. These results provide evidence that individuals' FL, FI, and Socialization positively relate to their levels of FR. Concerning the relation between FR and

income inequality (measured by the GINI index), the correlation results show significant ($p < 0.01$) and negative correlation [Corr(FR, GINI) = -0.414]. This means that lower country income inequality leads to higher individual FR.

[Insert Table 4 about here]

The results also reveal significant correlations between some individual-level controls and FR scores. Individuals who live in a city (100,000 to about 1000,000 people), with tertiary education, and those who are employed and self-employed are significantly ($p<0.01$) and positively correlated with FR. Age, those who live in a small town (3,000 to about 15,000 people) and a large city (with over 1000,000 people), with less than secondary and secondary education, not working and retired, are significantly ($p<0.01$ and $p <0.05$ for those who live in a small town) and negatively correlated with FR. These results provide initial evidence that younger individuals, living in a city, with higher education, and employment show higher levels of FR.

4.2. Regression Results

Results for the main effects and cross-level interactions are provided in Table 5. The baseline model specification (Column 1 – Model I) presents findings with the main individual-level predictors (FL, FI, and Socialization), income level inequality (GINI), and socio-demographic controls. The other model specifications (Columns 2, 3, and 4) represent the cross-level effect of country income inequality between FL (Model II.1), FI (Model II.2), and Socialization (Model II.3) on FR. Finally, our full model (Column 5 – Model III) introduces all variables and all cross-level effects.

[Insert Table 5 about here]

Concerning the impact of FL on FR, for all models, the results are positive (0.19, 0.641, 0.608, respectively for Model I, Model II.1, and Model III) and statistically significant

($p<0.001$). These results substantiate our hypothesis H1 and are in line with well-established literature on FR (e.g., Klapper & Lusardi, 2020; Kass-Hanna et al., 2022). The higher the individual's skills to understand, evaluate, and make informed decisions about financial matters, the higher their ability to resist, cope, and recover from financial shocks.

The coefficients for FI (0.346, 0.77, 0.842, Model I, II.2, and III, respectively) are positive and significant ($p<0.001$) on individual FR, for all models specifications As predicted and in support of hypothesis H2, individuals with higher levels of FI have higher levels of FR. Individuals who use and have access to basic financial services (such as bank accounts, loans, insurance, and investments), affordably and securely which are key to accumulating assets and savings could lead to growing future income and being more prepared to when an adverse event happens (OECD, 2021; Kass-Hanna et al., 2022).

The effect of Socialization, measured as individual access to some kind of media resource in the last seven days, on FR, in Model I is positive and significant (0.18. $p<0.001$). This means that the higher the individual use of some kind of media, the higher their individual FR. This result is in line with Carson (2014) and allows us to validate our H3. Nowadays, individuals are substantially dependent on the internet/social media as their major news source of information. However, when we introduce the moderation effect of income inequality (Model II.3 and Model III) the impact of Socialization on FR, although significant ($p<0.001$) becomes negative (-0.409, -0.821). This means that individuals with lower levels of Socialization (measured by media) have higher levels of FR. So, we do not validate our s H3 as in the first model. Still, this result is consistent with LeBaron-Black et al. (2023) who concluded that media influences were associated with less responsible spending behaviors.

Concerning income inequality results shows a significant and negative impact of GINI on FR for all models (-0.39, -0.27, -0.385, -0.509, -0.349; Model I, II.1, II.2, II.3, and III,

respectively, p< 0.001). This means that individuals who live in countries with lower income inequality have higher levels of FR. For the poor, income inequality could lead to an improving demand for debt due to stagnating income and for rich individuals a higher supply of savings resulting from rising income (Jaumotte et al., 2013).

Relating the cross-level effect of GINI in the relationship between FL and FR, we find that GINI significantly moderates the FL-FR relationship in Model I and Model III (-0.011, -0.013, p<0.001). As predicted and in support o H4a, income inequality moderates the positive relationship between FL and FR. Specifically, FL is indeed more influential for FR of individuals living in countries with lower income inequality. This means that individuals in lower income inequality contexts who have higher levels of FL, their FR improves. This result is in line with Oliver-Márquez et al. (2022). Concerning the cross-level effect of GINI in the relationship between FI and FR, in Model II.2 we find that GINI does not significantly moderate the FI-FR relationship. Thus, we fail to support our H4b. However, in Model III this relationship is negative and significant (-0.015; p<0.01). Particularly, for individuals living in countries with lower income inequality who have higher levels of FI, their FR significantly improves. So, we validated our H4b when we introduced all variables in the Model. This result is in line with Demir et al. (2022). Relatively to the cross-level effect of GINI in the relationship between Socialization and FR, we found that Socialization is truly more influential for FR of individuals living in countries with higher income inequality (0.022, 0.031; Model II.3 and III, respectively, p<0.001). So, we do not validate our H4c. We found that for individuals living in countries with higher income inequality who have higher levels of Socialization, their FR significantly improves.

Sociodemographic factors also contribute significantly to our results. Generally, there was no significant difference between the FR scores of women and men. In Model II.3 and Model III, we found that older individuals show higher levels of FR (Model II.3: 0.009, p<0.01;

Model III: 0.005, p<0.10). For all models, except Model III, those who live in a small town (3,000 to about 15,000 people) exhibit lower FR than those living in a village, hamlet, or rural area (fewer than 3,000 people) (-0.547, -0.449, -0.507, -0.559, p<0.001). The result is similar for individuals living in a town (15,000 to about 100,000 people) for Models I (-0.25, p< 0.01), Model II.2 (-0.197, p<0.05), and Model III (-0.248, p<0.01). For Model III individuals who live in a small town (3,000 to about 15,000 people) exhibit higher FR than those living in a village, hamlet, or rural area (fewer than 3,000 people) (0.552, p<0.001). In Model II.1, individuals living in a city (100,000 to about 1000,000 people) (0.197, p<0.05) have higher FR than those who live in a village, hamlet, or rural area (fewer than 3,000 people). Regarding education level, we find that those with less than secondary education (-0.347, p<0.05, for Model I and -0.901, -0.95, -0.823, -0.379, p<0.001, for other Models, respectively) and with secondary education (-0.38, -0.667, -0.616, -0.598, -0.404, p<0.001) exhibit lower FR than those with tertiary education. Finally, individuals who are self-employed (0.327, 0.305, p<0.01, for Models I and II.1; 0.427, 0.45, 0.348 p<0.001, for Models II.2, II.3, and III) have higher FR and individuals that do not work (-0.186, -0.193, p<0.10, for Models I and III; -0.698 -0.37, -0.55, p<0.001, for Models II.1, II.2, and II.3). Student (-0.397, p<0.05, for Model II.3) or retired (-0.443, p<0.001, for Model II.1; -0.232, -0.277, p<0.05, for Models II.2 and II.3) have lower FR than those who are employed.

4.3. Additional Analysis

To deepen our study, we made additional analyses based on the OECD (2020) definition of FR. According to the OCDE, the FR can be decomposed into six elements: (i) **keeping control over money** (a regular watch on one's financial situation, as pursuit of money flows, like planning and recording expenses, having a budget, making sure income is greater than expenses and avoid indebtedness), (ii) **taking care with expenditure** (prudently seeing expenditure against necessities and assembly financial obligations on time), (iii) **availability of a financial**

cushion (disposal of savings and the capacity to support for some time without income), (iv) **coping with a financial shortfall** (regularity of experiencing a shortfall and the apprehension about it), (v) **planning individual finances** (saving and following long-term financial goals), and (vi) **fraud awareness** (being aware of financial scams and fraud). In this sense, we estimate the initial models, the main effects, and cross-level interactions, for each of these six elements.[6]

Considering the baseline model (Model I, see Online Resource 5)), the impact of FL on FR is positive and statistically significant for almost all elements, except for 'fraud awareness'. The estimates coefficient suggested that a one-point increase in individual FL results in a 2.1–6.7% increase in individual elements of FR. The size of the FL coefficient is largest when using 'taking care with expenditure' and 'coping with a financial shortfall' as dependent variables and smaller when using 'availability of a financial cushion'. These results give relevance to the impact of FL on FR, primarily in cases when dealing with expenditure against necessities and meeting financial obligations on time and in cases of financial stress and concern. The results for Model II.1 (see Online Resource 6) and Model III (Online Resource 9 are similar, except for the fact that FL has a significantly negative impact on coping with a financial shortfall.

Regarding the effect of FI on FR (see Online Resource 5), positive and statistically significant results appear for 'availability of a financial cushion', 'planning individual finances', and 'fraud awareness', being that the size of the FI coefficient is highest when using 'fraud awareness' as the dependent variable. For models II.2 (see Online Resource 7) and III (Online Resource 9) the size of the FI coefficient is also highest when using 'fraud awareness'. This gives relevance to the fact that the use and access to basic financial services (e.g., bank accounts, loans, insurance, and investments), affordably and securely, protect individuals of being victims of financial scams and possible fraud.

[6] The results are available in the online resource.

Socialization has a positive and statistically significant effect on ‘keeping control over money, ‘availability of a financial cushion’, ‘planning individual finances’, and ‘fraud awareness’ on Model I (see Online Resource 5). The estimates coefficient suggested that a one-point increase in individual level of socialization, results in a 0.7–9.8% increase in those individual elements of FR. The highest coefficient corresponds to ‘fraud awareness’. However, when we analyze the results for Model II.3 (see Online Resource 8) and Model III (see Online Resource 9), Socialization has a negative and statistically significant effect on “fraud awareness”. The highest coefficients correspond to cases of a negative impact. So, probably, the role of media as a socialization agent is lower against financial scams and fraud as it shapes individuals’ understanding of money, work, consumption, savings, investment, and other economic issues.

The results of income inequality, in all models specification, shows a positive significantly effect of GINI on ‘keeping control over money’(see Online Resources 5-9). When income inequality is higher, individual’s regular watch on financial situation (e.g., pursue of money flows, like planning and recording expenses, having a budget, making sure income is greater than expenses and avoid indebtedness) is higher. When the dependent variables are ‘taking care with expenditure’, ‘coping with a financial shortfall’, and ‘fraud awareness’ the impact of GINI is significant and negative. This means that in cases income inequality is lower, individuals prudently sighted expenditure against necessities and assembly financial obligations on time, being aware of financial scams and fraud.

Concerning the cross-level effect of GINI in the relationship between FL and the elements of FR for Model II.1 (see Online Resource 6)), we find that GINI positive significantly moderates the FL-FR relationship for ‘Coping with a financial shortfall’ and negative significantly moderates the FL-FR relationship for ‘Fraud awareness’. This means that FL is indeed more influential for ‘Coping with a financial shortfall’ of individuals living in countries

with higher income inequality. However, FL is truly more influential for 'Fraud awareness' of individuals living in countries with lower income inequality. For Model III, results are similar, except for the fact that we find that also, GINI negative significantly moderates the FL-FR relationship for 'Planning individual finances.' So, for individuals in lower income inequality contexts who have higher levels of FL, their 'Planning individual finances' improves. When we analyze the moderation effect of income inequality on the relationship of FI and FR, we find a positive and significant result for 'Planning individual finances' and 'Taking care with Expenditure' for Models II.2 and III. In this sense, for individuals in higher income inequality contexts who have higher levels of FI, their 'Planning individual finances' and 'Taking care with Expenditure' will be higher. The results for the cross-level effect of GINI in the relationship between Socialization and FR are common in Model II.3 and Model III. When the dependent variable is 'Keeping Control over Money' Socialization is truly more influential of individuals living in countries with lower income inequality. Contrarily, when the dependent variables are 'Coping with a financial shortfall' and 'Fraud awareness' Socialization is more influential for individuals living in countries with higher income inequality.

When we depicted the dependent variable FR in six elements we obtained significant results for the sociodemographic variable Gender. For all model specifications, the results are negative and statistically significantly for 'keeping control over money', 'taking care with expenditure', and 'fraud awareness'. This means that women are more worried about controlling their finances, about expenses and not to be a victim of financial fraud or scams. Contrary, results are positive and significantly significant for the 'availability of financial cushion' for all model specifications. Men tend to be more interested in savings and the ability to support themselves for a period without income. For 'Coping with a financial shortfall', the results are similar except for the baseline model.

The results for the variable Age are also relevant. In all models with 'keeping control over money', 'availability of financial cushion', and 'taking care with expenditure' as dependent variables, we can conclude that older individuals keep a regular concern on their financial situation, have good care with expenditure and considering the need and affordability of purchases. They are more concerned with the disposal of savings and the capacity to support oneself for a period without income. 'Planning individual finances' is more relevant for younger individuals. For 'coping with a financial shortfall' in Model I (see Online Resource 5) and Model II.1 (see Online Resource 6) the results are positive and significant. This implies that an increase in the share of Age reduces the frequency of experiencing a shortfall and the worry about one. For Model II.2 (see Online Resource 7), when we analyzed the impact of FI alone, we came to different conclusions as the results were negative and significant. In this case, younger individuals face less of a shortfall and tend to worry less about it. The results for 'Fraud awareness' are not statistically significant.

In all model specifications (see Online Resources 5-9), individuals living in a small town (3,000 to about 15,000 people) tend to have fewer worries about 'keeping control over money', 'planning individual finances', and 'fraud awareness' than those living in a village, hamlet, or rural area (fewer than 3,000 people). Contrary results are achieved for 'fraud awareness', except for Model I. Regarding individuals living in a town (15,000 to about 100,000 people), the concerns about 'planning individual finances', 'taking care with expenditure', and 'fraud awareness' are low relative to those living in a village, hamlet, or rural area (fewer than 3,000 people) and high for 'availability of financial cushion' and 'coping with a financial shortfall' for almost models. For individuals living in a city (100,000 to about 1000,000 people), results are positive and significant for 'Keeping Control over Money' due to those living in a village, hamlet, or rural area (fewer than 3,000 people), for almost models. For individuals living in a large city (with over 1000,000 people), results are positive and significant for 'taking care with

expenditure' and 'coping with a financial shortfall' due to those living in a village, hamlet, or rural area (fewer than 3,000 people), for almost models. Contrary results appear to 'keeping control over money', 'availability of financial cushion', and 'planning individual finances', for almost mode specifications.

Regarding education levels, there are no major differences between elements of FR and model specifications. Generally, individuals with tertiary education have higher levels of FR than those with secondary or less than secondary education. Also, for employment results, there are no relevant issues. Mostly, being self-employed shows higher levels of FR than being employed and not working, retired, or being a student a lower level of FR.

4.4. Robustness Sample

We performed two additional analyses to increase confidence in our findings. First, to better understand the way income inequality, influenced the study relationships, we conduct to separate analyses by country classification: developed vs transition countries. Second, concerning our results and since an additional technique to well understand FR as a construct is to rely on descriptive approaches used in popular science as Age, we performed separate analyses by age cohorts of 18-29 (Age1), 30-59 (Age2), and age 60 or more (Age3).

4.4.1. Developed vs Transition Countries

As shown in Appendix A, the predictive power of the models is higher for developed countries with an adjusted R-squared value of 0.423-0.476. Concerning the effect of FL on FR, for all model specifications, results are positive and significant for developed countries. However, in economies in transition, the impact of FL on FR is only positive and significant in the baseline model. The consistency of the effect of FL on FR for developed countries gives strength to the importance of greater financial knowledge and major financial management skills to individuals living in developed countries towards making adequate financial decisions and having more

resilient behaviors. The results for FI are only significant and positive for economies in transition and in the baseline model. The influence of Socialization behavior on FR is higher for developed countries. Findings for income inequality are consistent for both country classifications and for all model specifications: less income inequality, higher individual FR.

Concerning the cross-level effects, for developed countries, as income inequality decreases, the positive effect of FL on FR increases, for both models (Model II.1 and Model III, appendix A). For Economies in Transition, the result is only significant for Model II.1 (see appendix A) and it is positive. Since income inequality is lower in developed countries, our findings allow us to conclude that FL is truly more influential for FR of individuals living in countries with lower income inequality. The results for cross level effect of income inequality in the relationship of FI and FR are only statically significant for economies in transition. Regarding the moderating effect of income inequality in the relationship between Socialization and FR, the results are simply significant and positive for developed countries. So, the impact of Socialization on FR will be higher in developed countries with greater income inequality.

When we analyze sociodemographic controls, we concluded that mostly, older individuals, have higher levels of FR, independently, living in developed countries or in economies of transition. Generally, in case of developed countries, individuals living in a small town or a town, have lower levels of FR than those living in a village, hamlet, or rural area. For economies in transition, those who live in a large city have higher levels of FR. The results for educational levels and employment are consistent with previous analyses.

4.4.2. Age

The analyses of age cohorts are featured in Appendix B. Mainly, we find a positive effect of FL and FI on FR for all age groups which gives relevance to this relationship. The effect of Socialization on FR is significant and positive in the baseline model for all age cohorts.

However, when we introduce the moderation effect of income inequality this relationship becomes negative, mainly in working age (30-59). The results of the GINI index effect on FR are as expected in all model specifications: more income inequality less FR.

The results for the moderation effect of income inequality on the relationship between FL and FR are negative and only significant for individuals with 30 or more age. This means that as income inequality decreases, the positive effect of FL on FR increases for working and retired individuals. In the case of FI, the iteration coefficient is negative and significant for ages between 30 and 59 years hold. Only in working age, the effect of FI on FR improves as income inequality reduces. Concerning the moderation effect of income inequality on the relationship between Socialization and FR, we concluded that for all Ages cohorts, this positive effect is higher in countries with higher income inequality.

For the Sociodemographic variable Urban we find consistent results in all models and ages between 18 and 30 years hold. Individuals living in a town (15,000 to about 100,000 people) have lower levels of FR than those living in a village, hamlet, or rural area (fewer than 3,000 people). For education, individuals with tertiary education have higher levels of FR than those with secondary education. As expected, individuals of working age (30-59) are sell-employed have higher levels of FR as those who are employed. Also, in most age cohorts, individuals who do not work have lower levels of FR as those who are employed.

5. Discussion

This research squares from attributes of Sherraden's financial capability model (2010) as a driving context to analyze how specific aspects of personal of individuals' financial capability lead to their FR.. So, we were interested in how FL, FI, and socialization impact FR. We are also concerned in examine the cross levels effect of income inequality in the relationship between FL, FI, Socialization, and FR. Hence, our study employed an ordinary least squares

(OLS) regression drawing on data from 10 countries, collected by OECD/INFE 2020 International Survey of Adult Financial Literacy and we proposed hypotheses to predict those effects, controlling for sociodemographic factors previous linked to FR.

The results allow us to conclude the importance of FL on FR. This is also true when we depicted the dependent variable FR in six elements and when we performed two additional analyses: by country classification or by age. Living in a transition or a developed country, being younger or older, to individuals support financially resilient behaviors they need to have higher levels of FL. When we attend to different elements of FR , we found that the impact of FL is higher for prudently seeing expenditure against necessities and assembly financial obligations on time (taking care as expenditure) and regularity of experiencing a shortfall and the apprehension about it (coping with a financial shortfall). Thereafter, this study investigated the cross-level role of income inequality as an important driver for improving the relationship between FL and FR and we concluded that FL is indeed more influential for FR of individuals living in countries with lower income inequality. However, when we introduced this cross-level effect for the dependent variable 'coping with a financial shortfall' the results changed. We found that FL is indeed more influential for 'coping with a financial shortfall' of individuals living in countries with higher income inequality. Individuals living in countries with higher income inequality are more likely to find that their income does not quite cover their living expenses and are more likely to worry about paying their normal living expenses. In this sense, individuals with major financial knowledge and financial management skills show a higher aptitude to act which means that they are more likely to make good financial decisions (Sherraden, 2010). Our result for the analysis of developed vs economies in transition corroborates this result since individuals living in transition economies the impact of FL on FR is more influential for countries with higher income inequality.

Concerning the effect of FI on FR, we found that the higher the equitable access and participation of people in the financial system, the higher their FR. This result is more relevant for individuals living in transition economies. Outcomes are also consistent for the 'availability of a financial cushion' (disposal of savings and the capacity to support for a period without income) and 'fraud awareness' (being aware of financial scams and fraud). However, when the dependent variable is 'keeping control over money' or 'taking care with expenditure' the result is reversed. This means that the impact of FI on FR is lower when individuals keep a close personal watch on their financial affairs and pay bills on time. Here, we also found that FI is indeed more influential for FR of individuals living in countries with lower income inequality, except in cases when the dependent variable is 'planning individual finances' and 'taking care with expenditure'. This means that when we introduce the cross-level effect of income inequality, the impact of FI is higher for individuals who prudently see expenditure against necessities and assembly financial obligations on time in countries with higher income inequality.

We also found some pertinent results for Socialization. Without the interaction effect of income inequality, the impact of socialization, measured by media, on FR is positive. Nonetheless, the result changes with the cross-level effect. This means that the impact of socialization on FR will be higher for individuals living in countries with higher income inequality. The findings for the analysis by age cohorts also validate these results. This also occurs when the dependent variables are 'coping with a financial shortfall' and 'fraud awareness'. These results allow us to conclude that the impact of socialization on individual FR is highly dependent on country income inequality and varies between the concerns of different FR behaviors.

We only found gender differences when looking at different elements of FR. Men tend to be more worried about the 'availability of a financial cushion' and 'coping with a financial

shortfall. Women are more concerned about the controlling over money, taking care with expenditure, and with fraud. Concerning age, older individuals show higher levels of FR about making sure income is greater than expenses and avoiding indebtedness, having savings, and assembly financial obligations on time. Younger individuals have higher levels of FR when they follow long-term financial goals. The results are also interesting for transition economies, where older individuals show higher levels of FR. Generally, individuals living in a village, hamlet, or rural area (fewer than 3,000 people) shows higher levels of FR. We found some differences when we analyzed by FR elements. When the dependent variable is 'coping with a financial shortfall' individuals living in a town with more than 3000 people have higher levels of FR. Also, when the dependent variable is 'keeping control over money' those who live in a city (100,000 to about 1000,000 people) have higher levels of FR. In transition economies, individuals living in a city or large city, have higher levels of FR. In this sense, we can conclude that the levels of individual FR are higher in individuals living in cities and large cities for economies in transition and where the concerns about one's financial situation (as pursuit of money flows, like planning and recording expenses, having a budget, making sure income is greater than expenses and avoid indebtedness) and apprehension about a financial shortfall are higher. Concerning education, we commonly concluded that those with tertiary education have higher levels of FR than those with lower secondary education or secondary education. About employment, those who are self-employed shows higher levels of FR than those who are employed and those who do not work, be a student or retired shows low levels of FR than those who are employed.

Emerging financial vulnerability and financial crises require a deep and active response, as well as a thorough analysis of individual financial resilience. . In response to this need, our research found three main implications. First, FR as the individual capacity to overlap financial adversities relying on internal abilities and external resources (Salignac et al., 2019) implies

that individuals can critically explore financial information, assess risks and rewards, and make decisions that are aligned with individual and family financial goals, this is higher levels of Financial Literacy. Having equitable access and participation in the financial system is also relevant. The use of media resources as a way of cognitive, behavioral, and environmental influence has have impact on individual financial knowledge and on their financial decisions (impacts from different ways on individual concerns about financial resilience behaviors. Second, the results give relevance to the impact of country income inequality on individual FR. Individuals living in countries with lower income inequality generally have higher levels of FR, changing with individual levels of FL FI, and Socialization. Third, actions to avoid indebtedness, such as planning and recording expenses, having a budget and ensuring that costs do not exceed profits, maintaining savings, setting financial goals, managing the frequency of facing a shortfall, and being aware of financial scams and possible fraud, are, elements of FR (OECD, 2020). These elements vary across a set of individuals characteristics, such as FL, FI, and Socialization, as well as sociodemographic factors like gender, age, urbanization, education, and employment. In this sense, our results provide evidence of the relevance of FR and its main implications for the financial stability of individuals.

6. Conclusion

There is growing interest in understanding individuals' FR as it could help to identify the relevant resources to enable people to cope and deal with financial adversity. Having FR is a crucial characteristic for individuals to overcome difficulties in life and deal with unpredictable and highly unexpected shocks. Concerning, more research of financial capability is needed to help individuals with their personal finances. Our study addresses this gap, squaring from attributes of Sherraden's financial capability model (2010) as a driving context to analyze how specific aspects of personal financial capability, such as FL, FI, and Socialization lead to FR.

We are also concerned in examine the cross levels effect of income inequality in the relationship between FL, FI, Socialization and FR.

Using data from 10 countries, collected by OECD/INFE 2020 International Survey of Adult Financial Literacy we find that FL, FI, and Socialization positively affect FR. So, we concluded that individual's capacity to act in their own best financial interest is given by their socioeconomic and environmental conditions, which include financial knowledge, behaviors, and attitudes in managing financial resources such as FL, access and use of financial services and socialization opportunities. We also found evidence that individual level of FR varies across country income inequality and its cross-level effect on the relationship between FL, FI, and Socialization. Individuals living in countries with lower income inequality have higher levels of FR. We also concluded that the effect of FL and FI on FR is more pronounced in countries with lower income inequality. Concerning Socialization, the cross-level effect of income inequality on the relationship between socialization and FR is higher on countries with higher income inequality.

We also found relevant findings when we depicted our dependent variable in six elements based on the OECD definition of FR. We found that FL is truly important to take an effectively control over money, disposing savings, considering expenditure with precaution, have long-term financial goals, and avoiding experiencing a shortfall. The access and use of formal financial services have a positive impact in financial resilience behaviors as the capacity to have a financial cushion, to plan individual finances and to be aware of a financial fraud. The use of media only impacts negatively on assembly financial obligations on time and the regularity of experiencing a shortfall. These results allow us to conclude the importance of FL, FI, and Socialization in understanding financial resilience behaviors.

The study also highlights the relevance of sociodemographic factors. We only found gender and age differences when we depicted the dependent variable, giving relevance to the fact that FR is an individual ability to edge financial hardships relying on internal abilities and external resources. Men show higher levels of FR behaviors as disposal of savings and not experiencing a shortfall, women are more interested in keeping a regular watch on one's financial situation, assembling financial obligations on time, and being aware of financial scams and fraud. Younger individuals have higher levels of FR when they follow long-term financial goals. In general, individuals living in a village, hamlet, or rural area (fewer than 3,000 people) shows higher levels of FR. The results also show that higher levels of education and being employed lead to higher levels of FR.

Significant outcomes could be also observed in the analyses between developed countries and economies in transition. The positive impact of FL and Socialization on FR is more consistent for developed countries and the positive impact of FI is only significant for economies in transition. Another important issue is the fact that generally, in the case of developed countries, individuals living in a small town or a town, have lower levels of FR than those living in a village, hamlet, or rural area. For economies in transition those who live in a large city have higher levels of FR.

The study has relevant implications for financial resilience scope. First, FL, as the individual ability to act, can enable individuals to have greater control over personal financial matters, such as saving and investment to manage short-term income and reach longer-term financial goals to avoid financial scams and fraud. The effect of FL on FR is higher in developed countries. This means that governments in economies in transition should continuous developing policies and plans to support FL behaviors to avoid financial frauds and scams. Second, the access and use of formal financial services, as the opportunity to act, leads individuals to higher levels of FR, which means that governments must develop initiatives so

that individuals can invest in sustainable finance products. Third, the different outcomes of the use of media and its impact on individual FR calls for more research in this scope. Fourth, the different outcomes between the analysis of the six elements of financial resilience suggest the need for continuous study. Different financial resilience behaviors that allow individual availability of appropriate resources and the capacity to organize them to resist, deal and recover from negative financial shocks varies across a set of individuals characteristics as FL, FI, and Socialization and with sociodemographic factors such as gender, age, urban, education and employment. Fifth, the results highlight that imbalances in levels of financial resilience are also driven by country income inequality. Likewise, differences between developed countries and economies in transition corroborate this question. Thus, our findings call for additional research to identify the best strategies for seeking financial literacy, financial inclusion and socialization to boost financial resilience in countries with different levels of income distribution. The deteriorating of the world economic conditions in recent years negatively impacts on individual financial conditions. In this sense more relevance should be given to the analysis of the individual capability to deal with these constraints, this is, their financial resilience. So, governments should develop strategies and programs to support individual behaviors and attitudes to lead to improved individual financial resilience.

As with all research, our study has some limitations. Since the data is only available for one period, it is not possible to assess the results before and after the financial crisis caused by the pandemic. So, future researchers should develop some longitudinal studies to overcome this question. Also, no measures of digital financial literacy and individual subjective perception of their financial situation were included. Future studies should analyze the impact of those variables on financial resilience behaviors of individuals.

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TABLES

Table 1. Description of Variables and Source

Variables	Description	Sources
Dependent Variables		
Financial Resilience (FR)	Derived value that ranges from 0–18	OECD
Independent Variables		
Financial Literacy (FL)	Derived value that ranges from 1–21	OECD
Financial Inclusion (FI)	Derived value that ranges from 0–7	OECD
Socialization	Derived value that ranges from 0-9	OECD
Demographics		
Gender	Dummy variable equal to 1 if male; 0 otherwise	OECD
Age	Derived value that ranges from 18-99	OECD
Urban / Rural		
Urban1	Dummy variable equal to 1 if a village, hamlet, or rural area (fewer than 3,000 people); 0 otherwise	
Urban2	Dummy variable equal to 1 if a small town (3,000 to about 15,000 people); 0 otherwise	
Urban3	Dummy variable equal to 1 if a town (15,000 to about 100,000 people); 0 otherwise	
Urban4	Dummy variable equal to 1 if a city (100,000 to about 1000,000 people); 0 otherwise	
Urban5	Dummy variable equal to 1 if a large city (with over 1000,000 people); 0 otherwise	
Education Level		OECD
Less than Secondary	Equals 1 if respondents have less than secondary education; 0 otherwise	
Secondary	Equals 1 if respondents have secondary education; 0 otherwise	
Tertiary	Equals 1 if respondents have tertiary education. 0 otherwise	
Employment Status		OECD
Employed	Equals 1 if respondents are employed; 0 otherwise	
Self-Employed	Equals 1 if respondents are self-employed; 0 otherwise	
Not working	Equals 1 if t respondents are unemployed or unable to work due to sickness or ill-health; 0 otherwise	
Student	Equals 1 if respondents are a student. 0 otherwise	
Retired	Equals 1 if respondents are retired; 0 otherwise	
Moderating variable		
GINI	Gini index measures extent to which distribution of income (or. in some cases consumption expenditure) among individuals or households within an economy deviates from perfectly equal distribution; between 0 and 100	World Bank

Table 2. Sample Composition

Country	Observations	Percentage	Mean FR	Mean FL	Mean FI	Mean Socialization	GINI
Developed							
Bulgaria	1,047	10.04%	5	12.3	3	5	40.3
Croatia	1,079	10.35%	13	12.3	4	6	28.9
Estonia	1,005	9.64%	13	13.8	4	6	30,8
Hungary	1,001	9.60%	13	12.1	3	6	30
Poland	1,000	9.59%	12	13.1	4	6	30.2
Romania	1,060	10.16%	12	11.3	3	6	34.8
Economies in Transition							
Georgia	1,056	10.13%	12	12.2	3	4	34.5
Moldova	1,074	10.30%	12	11.9	2	5	26
Montenegro	1,030	9.88%	12	12.5	4	6	36.8
North Macedonia	1,076	10.32%	12	11.7	3	5	33
Total	**10,428**	**100.0%**	**11.7**	**12.3**	**3.3**	**5.5**	**32.5**

Note: Check Table 1 for description of variables.

Table 3. Summary Statistics

	N	Mean	Median	SD	Min	Max
FR	10428	11.742	13.000	3.831	0.000	18.000
FL	10428	12.293	12.333	3.082	1.000	20.667
FI	10428	3.379	3.000	1.622	0.000	7.000
Socialization	10428	5.463	6.000	2.259	0.000	9.000
GINI	10428	32.529	33.000	3.998	26.000	40.300
Gender	10428	0.453	0.000	0.498	0.000	1.000
Age	10406	46.646	46.000	16.318	18.000	99.000
Urban / Rural						
Urban1	10422	0.353	0.000	0.478	0.000	1.000
Urban2	10422	0.121	0.000	0.327	0.000	1.000
Urban3	10422	0.204	0.000	0.403	0.000	1.000
Urban4	10422	0.241	0.000	0.428	0.000	1.000
Urban5	10422	0.080	0.000	0.271	0.000	1.000
Education Level						
Less than Secondary	10387	0.072	0.000	0.259	0.000	1.000
Secondary	10387	0.634	1.000	0.482	0.000	1.000
Tertiary	10387	0.293	0.000	0.455	0.000	1.000
Employment Status						
Employed	10301	0.503	1.000	0.500	0.000	1.000
Self-employed	10301	0.111	0.000	0.314	0.000	1.000
Not working	10301	0.136	0.000	0.343	0.000	1.000
Student	10301	0.038	0.000	0.191	0.000	1.000
Retired	10301	0.213	0.000	0.409	0.000	1.000

Notes: Full sample size is 10.245 observations. SD = standard deviation. Check Table 1 for description of variables.

Table 4. Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(18)	(20)
FR	1																			
FL	.265**	1																		
FI	.273**	.400**	1																	
Socialization	.265**	.262**	.418**	1																
GINI	-.414**	-.024*	-0.014	-.109**	1															
Gender	0.000	0.006	.038**	.025*	0.014	1														
Age	-.053**	-.028**	-.136**	-.365**	0.002	-.024*	1													
Urban1	-0.014	-.078**	-.150**	-.166**	-.059**	.020*	.061**	1												
Urban2	-0.017	-.023*	-.025**	0.003	-.089**	0.005	-0.002	-.275**	1											
Urban3	-.023*	.023*	.069**	.030**	.059**	0.005	0.003	-.375**	-.189**	1										
Urban4	.071**	.064**	.088**	.140**	-0.016	-0.016	-.058**	-.416**	-.209**	-.285**	1									
Urban5	-.033**	.030**	.053**	.025*	.148**	-.023*	-0.018	-.218**	-.110**	-.150**	-.166**	1								
Less than secondary	-.079**	-.161**	-.179**	-.272**	-.025*	-.034**	.166**	.093**	.026**	-0.001	-.086**	-.057**	1							
Secondary	-.057**	-.087**	-.118**	-.107**	-.069**	.063**	0.010	.086**	.037**	0.002	-.070**	-.088**	-.368**	1						
Tertiary	.105**	.184**	.226**	.268**	.087**	-.047**	-.106**	-.144**	-.054**	-0.001	.123**	.126**	-.180**	-.848**	1					
Employed	.077**	.097**	.249**	.301**	0.006	.059**	-.316**	-.073**	.035**	0.011	.032**	.021*	-.189**	0.001	.106**	1				
Self Employed	.077**	.114**	.113**	.111**	0.012	.104**	-.052**	-.034**	-.040**	0.005	.046**	.028**	-.071**	-.077**	.121**	-.355**	1			
Not working	-.088**	-.120**	-.205**	-.158**	0.001	-.117**	-.129**	.115**	-.028**	-.029**	-.063**	-.026**	.146**	0.002	-.085**	-.399**	-.140**	1		
Student	-0.015	-.051**	-.065**	.067**	-0.007	0.002	-.314**	-.034**	0.013	0.001	.030**	-0.006	-.020*	.070**	-.063**	-.199**	-.070**	-.079**	1	
Retired	-.072**	-.082**	-.189**	-.352**	-0.014	-.054**	.680**	.035**	0.006	0.007	-.036**	-.023*	.172**	.023*	-.122**	-.522**	-.183**	-.206**	-.103**	1

Notes: * Statistical significance at 5% level; ** Statistical Significance at 1% level.
Check Table 1 for description of variables.

Table 5. Regression Estimation Results. Dependent Variable (DV): Financial Resilience (FR)

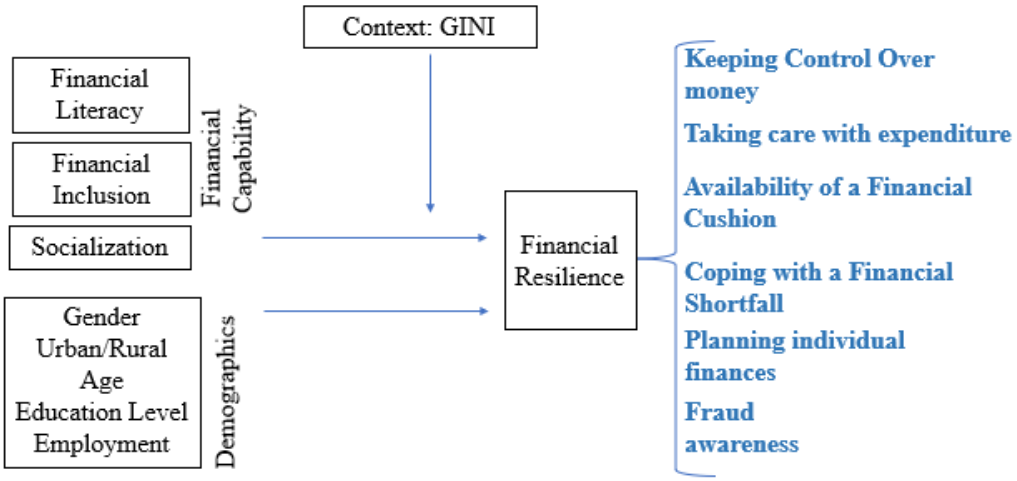
	Base line model	Interactions			Full model
	(I)	(II.1)	(II.2)	(II.3)	(III)
		FL	FI	Socialization	
FL	0.19****	0.641****			0.608****
	(0.012)	(0.084)			(0.089)
FL*GINI		-0.011****			-0.013****
		(0.003)			(0.003)
FI	0.346****		0.77****		0.842****
	(0.024)		(0.166)		(0.191)
FI*GINI			-0.007		-0.015***
			(0.005)		(0.006)
Socialization	0.18****			-0.409****	-0.821****
	(0.018)			(0.125)	(0.135)
Socialization*GINI				0.022****	0.031****
				(0.004)	(0.004)
GINI	-0.39****	-0.27****	-0.385****	-0.509****	-0.349****
	(0.008)	(0.032)	(0.017)	(0.022)	(0.033)
Gender	-0.05	-0.04	-0.073	-0.061	-0.064
	(0.065)	(0.067)	(0.067)	(0.068)	(0.065)
Age	0.004	-0.003	0.001	0.009***	0.005*
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
(Reference category: Urban1)					
Urban2	-0.547****	-0.449****	-0.507****	-0.559****	0.552****
	(0.107)	(0.109)	(0.109)	(0.111)	(0.107)
Urban3	-0.25***	-0.046	-0.197**	-0.188	-0.248***
	(0.09)	(0.091)	(0.092)	(0.093)	(0.09)
Urban4	0.019	0.197**	0.123	0.095	-0.03
	(0.087)	(0.088)	(0.089)	(0.09)	(0.087)
Urban5	-0.045	0.124	-0.007	0.035	-0.059
	(0.128)	(0.131)	(0.131)	(0.132)	(0.128)
(Reference category: Tertiary)					
Less than secondary	-0.347**	-0.901****	-0.95****	-0.823****	-0.379***
	(0.147)	(0.146)	(0.146)	(0.15)	(0.146)
Secondary	-0.38****	-0.667****	-0.616****	-0.598****	-0.404****
	(0.076)	(0.077)	(0.077)	(0.078)	(0.076)
(Reference category: Employed)					
Self Employed	0.327***	0.305***	0.427****	0.45****	0.348****
	(0.108)	(0.11)	(0.11)	(0.111)	(0.107)
Not working	-0.186*	-0.698****	-0.37****	-0.55****	-0.193*
	(0.105)	(0.104)	(0.106)	(0.107)	(0.104)
Student	0.027	-0.293	0	-0.397**	0.022
	(0.183)	(0.185)	(0.186)	(0.187)	(0.182)
Retired	-0.048	-0.443****	-0.232**	-0.277**	-0.053
	(0.115)	(0.115)	(0.116)	(0.118)	0.115

Constant	20.142****	17.979****	23.023****	26.789****	18.779****
	(0.369)	(1.066)	(0.586)	(0.734)	(1.119)
Observations	10,245	10,245	10,245	10,245	10,245
R2	0.287	0.259	0.259	0.241	0.292

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses. Check Table 1 for description of variables.

FIGURES

Figure 1: Conceptual Framework



APPENDIXES

Appendix A: Regression Estimation Results by World Bank Country Classification. Dependent Variable (DV): Financial Resilience (FR)

	Baseline Model		Interaction: FL		Interaction: FI		Interaction: Socialization		Full Model	
	Developed	Transition	Developed	Transition	Developed	Transition	Developed	Transition	Developed	Transition
	I		II.1		II.2		II.3		III	
FL	0.299****	0.076****	1.031****	-0.155					1.304****	-0.018
	(0.015)	(0.015)	(0.1)	(0.123)					(0.114)	(0.121)
FL*GINI			-0.021****	0.009**					-0.03****	0.003
			(0.003)	(0.004)					(0.003)	(0.004)
FI	0	0.444****			0.2	-0.357			-0.023	-0.281
	(0.031)	(0.032)			(0.219)	(0.253)			(0.256)	(0.271)
FI*GINI					0.003	0.027****			0	0.022***
					(0.007)	(0.008)			(0.008)	(0.008)
Socialization	0.155****	0.204****					0.799****	0.046	-1.278****	0.154
	(0.023)	(0.024)					(0.16)	(0.171)	(0.176)	(0.176)
Socialization*GINI							0.033****	0.007	0.044****	0.001
							(0.005)	(0.005)	(0.005)	(0.005)
GINI	-0.631****	-0.087****	-0.386****	-0.151****	-0.66****	-0.163****	-0.819****	-0.075***	-0.492****	-0.187****
	(0.011)	(0.012)	(0.038)	(0.047)	(0.024)	(0.023)	(0.028)	(0.029)	(0.04)	(0.050)
Gender	-0.027	-0.136	-0.035	-0.094	-0.059	-0.127	-0.048	-0.129	-0.042	-0.138
	(0.081)	(0.089)	(0.081)	(0.093)	(0.084)	(0.090)	(0.084)	(0.092)	(0.08)	(0.089)
Age	0	0.008*	-0.005	-0.001	0.002	0.0001	0.009**	0.007*	0	0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
(Reference category: Urban1)										
Urban2	-0.883****	0.084	-0.816****	0.150	-0.906****	0.157	-0.925****	0.101	-0.824****	0.074

	(0.127)	(0.171)	(0.127)	(0.177)	(0.132)	(0.172)	(0.131)	(0.176)	(0.126)	(0.171)
Urban3	-0.691****	-0.122	-0.643****	0.186	-0.637****	-0.054	-0.618****	0.032	-0.634****	-0.132
	(0.115)	(0.120)	(0.115)	(0.123)	(0.119)	(0.120)	(0.119)	(0.123)	(0.114)	(0.120)
Urban4	0.034	0.172	0.042	0.420****	0.049	0.348***	0.034	0.230*	-0.031	0.176
	(0.11)	(0.119)	(0.109)	(0.121)	(0.114)	(0.118)	(0.113)	(0.122)	(0.109)	(0.119)
Urban5	-0.258*	0.638****	-0.146	0.624****	-0.38**	0.724****	-0.402***	0.689****	-0.276*	0.642****
	(0.158)	(0.179)	(0.158)	(0.186)	(0.166)	(0.181)	(0.164)	(0.184)	(0.158)	(0.179)
(Reference category: Tertiary)										
Educ_Less_than_secondary	-0.362*	-0.872****	-0.681****	-1.559****	-1.34****	-1.220****	-1.152****	-1.177****	-0.42**	-0.851****
	(0.204)	(0.182)	(0.198)	(0.183)	(0.204)	(0.180)	(0.206)	(0.187)	(0.202)	(0.182)
Educ_Secundary	-0.353****	-0.275***	-0.534****	-0.663****	-0.678****	-0.478****	-0.577****	-0.480****	-0.362****	-0.283***
	(0.1)	(0.101)	(0.098)	(0.102)	(0.103)	(0.100)	(0.102)	(0.104)	(0.1)	(0.102)
(Reference category: Employed)										
Self Employed	0.159	0.359***	0.244*	0.309**	0.405***	0.363***	0.333**	0.454****	0.161	0.395***
	(0.144)	(0.139)	(0.144)	(0.144)	(0.149)	(0.140)	(0.148)	(0.143)	(0.142)	(0.139)
Not working	-0.52****	-0.677****	-0.621****	-1.309****	-0.761****	-0.854****	-0.773****	-1.060****	-0.535****	-0.641****
	(0.157)	(0.127)	(0.156)	(0.126)	(0.163)	(0.127)	(0.161)	(0.129)	(0.155)	(0.128)
Student	-0.48**	-0.113	-0.465**	-0.502**	-0.546**	-0.089	-0.751****	-0.461*	-0.467**	-0.070
	(0.23)	(0.245)	(0.229)	(0.253)	(0.239)	(0.248)	(0.236)	(0.251)	(0.228)	(0.246)
Retired	-0.048	-0.420***	-0.16	-0.917****	-0.19	-0.662****	-0.132	-0.634****	-0.02	-0.421***
	(0.143)	(0.157)	(0.142)	(0.159)	0.148	(0.157)	(0.147)	(0.161)	(0.142)	(0.157)
Constant	27.991****	11.789****	20.804****	16.383****	32.698****	16.431****	37.034****	13.525****	23.238****	15.017****
	(0.507)	(0.477)	(1.306)	(1.530)	(0.852)	(0.759)	(0.958)	(0.977)	(1.375)	(1.647)
Observations	6,108	4,137	6,108	4,137	6,108	4,137	6,108	4,137	6,108	4,137
R2	0.465	0.184	0.465	0.124	0.423	0.167	0.429	0.135	0.476	0.186

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses. Check Table 1 for description of variables.

Appendix B: Regression Estimation Results by Age. Dependent Variable (DV): Financial Resilience (FR)

	Base line Model			Interactions: FL			Interactions: FI			Interactions: Socialization			Full Model		
	Age1	Age2	Age3	Age1	Age2	Age3	Age1	Age2	Age3	Age1	Age2	Age3	Age1	Age2	Age3
	I			II.1			II.2			II.3			III		
FL	0.269****	0.2****	0.107****	0.219	0.796****	0.642****							0.164	0.772****	0.568****
	(0.027)	(0.015)	(0.024)	(0.2)	(0.111)	(0.168)							(0.213)	(0.119)	-0.176
FL*GINI				0.004	-0.016****	-0.013***							0.003	-0.017****	-0.014***
				(0.006)	(0.003)	(0.005)							(0.006)	(0.004)	(0.005)
FI	0.267****	0.274****	0.568****				0.434	0.892****	1.251****				0.503	0.761***	1.147***
	(0.057)	(0.03)	(0.05)				(0.413)	(0.218)	(0.363)				(0.452)	(0.247)	(0.412)
FI*GINI							0.003	-0.013**	-0.017				-0.007	-0.015**	-0.018
							(0.013)	(0.007)	(0.011)				(0.014)	(0.008)	(0.013)
Socialization	0.198****	0.179****	0.182****							-0.386	-0.296*	-0.376	-0.525	-0.775****	-0.699**
	(0.042)	(0.023)	(0.037)							(0.337)	(0.173)	(0.274)	(0.345)	(0.186)	(0.291)
Socialization*GINI										0.022**	0.018****	0.023***	0.022**	0.029****	0.028***
										(0.01)	(0.005)	(0.009)	(0.011)	(0.006)	(0.009)
GINI	-0.342****	-0.378****	-0.444****	-0.389****	-0.195****	-0.318****	-0.373****	-0.349****	-0.425****	-0.493****	-0.482****	-0.524****	-0.492****	-0.274****	-0.339****
	(0.019)	(0.011)	(0.017)	(0.074)	(0.043)	(0.062)	(0.043)	(0.025)	(0.031)	(0.065)	(0.032)	(0.036)	(0.087)	(0.046)	(0.062)
Gender	-0.013	-0.093	-0.006	-0.016	0.085	0.094	0.072	-0.146*	0.019	-0.033	-0.104	0.048	-0.015	-0.105	-0.009
	(0.155)	(0.086)	(0.132)	(0.157)	(0.087)	(0.137)	(0.16)	(0.088)	(0.134)	(0.162)	(0.089)	(0.137)	(0.156)	(0.086)	(0.132)
(Reference category: Urban1)															
Urban2	-0.421*	0.729****	-0.281	-0.413	-0.612****	-0.101	-0.501*	-0.636****	0.271	-0.456*	-0.72****	-0.281	-0.434*	-0.714****	-0.304
	(0.255)	(0.141)	(0.132)	(0.258)	(0.143)	(0.22)	(0.263)	(0.144)	(0.214)	(0.266)	(0.145)	(0.22)	(0.255)	(0.141)	(0.212)
Urban3	-0.514**	-0.173	-0.261	-0.416*	0.026	0.076	-0.538**	-0.087	-0.231	-0.468**	-0.037	-0.019	-0.511**	-0.152	-0.285*

	(0.218)	(0.119)	(0.178)	(0.22)	(0.12)	(0.183)	(0.225)	(0.121)	(0.18)	(0.227)	(0.122)	(0.183)	(0.218)	(0.118)	(0.178)
Urban4	0.162	0.042	-0.14	0.31	0.216*	0.082	0.176	0.149	0.003	0.168	0.145	-0.074	0.141	-0.008	-0.177
	(0.203)	(0.114)	(0.179)	(0.206)	(0.115)	(0.184)	(0.21)	(0.116)	(0.18)	(0.212)	(0.118)	(0.185)	(0.204)	(0.114)	(0.179)
Urban5	0.033	-0.124	-0.039	0.09	0.04	0.282	-0.004	-0.03	-0.041	0.104	0.01	0.019	0.026	-0.113	-0.079
	(0.301)	(0.166)	(0.269)	(0.305)	(0.168)	(0.277)	(0.311)	(0.17)	(0.271	(0.314)	(0.171)	(0.278	(0.301)	(0.166)	(0.269)
(Reference category: SecundarySecondary)															
Educ_Less_than_secondary	-0.566	-0.031	-0.299	-0.755*	-0.366*	-0.946****	-1.034***	-0.46**	0.828****	-1.137***	-0.376*	-0.42*	-0.532	-0.033	-0.325
	(0.388)	(0.21)	(0.245)	(0.392)	(0.212)	(0.241)	(0.398)	(0.213)	(0.234)	(0.402)	(0.216)	(0.253)	(0.388)	(0.209)	(0.245)
Educ_Tertiary	0.321*	0.323****	-0.505***	0.455***	0.621****	-0.916****	0.605****	0.557****	-0.773****	0.703****	0.536****	-0.572****	0.319*	0.364****	-0.519***
	(0.177)	(0.096)	(0.172)	(0.179)	(0.096)	(0.173)	(0.183)	(0.097)	(0.169)	(0.182)	(0.098)	(0.178)	(0.179)	(0.096)	(0.173)
(Reference category: Employed)															
Self Employed	-0.31	0.458****	0.043	-0.398	0.427****	0.063	-0.234	0.571****	0.106	-0.204	0.589****	0.125	-0.32	0.478****	0.089
	(0.136)	(0.199)	(0.365)	(0.32)	(0.121)	(0.378)	(0.326)	(0.121)	(0.369)	(0.329)	(0.122)	(0.378)	(0.316)	(0.118)	(0.365)
Not working	-0.592***	-0.039	-0.261	-0.97****	-0.506****	-0.891***	-0.679***	-0.255**	-0.413	-0.933****	-0.318**	-0.824	-0.585***	-0.049	-0.275
	(0.216)	(0.13)	(0.328)	(0.212)	(0.127)	(0.336)	(0.222)	(0.131)	(0.33)	(0.22)	(0.132)	(0.336)	(0.216)	(0.129)	(0.327)
Student	-0.066	0.972		-0.248	0.765		-0.043	0.987		-0.417**	0.799		-0.088	0.852	
	(0.205)	(1.585)		(0.205)	(1.608)		(0.211)	(1.619)		(0.21)	(1.633)		(0.205)	(1.579)	
Retired	3.752	-0.146	-0.015	2.64	-0.493*	-0.452**	4.159	-0.359	-0.153	3.699	-0.228	-0.231	3.808	-0.15	-0.014
	(3.293)	(0.268)	(0.197)	(3.338)	(0.271)	(0.201)	(3.4)	(0.273)	(0.197)	(3.431)	(0.277)	(0.203)	(3.292)	(0.268)	(0.197)
Constant	17.615****	19.723****	22.578****	20.439****	14.82****	19.889****	22.082****	21.576****	23.91****	25.848****	25.888****	27.48****	22.457****	16.321****	19.202****
	(0.766)	(0.431)	(0.697)	(2.462)	(1.436)	(2.072)	(1.409)	(0.813)	(1.043)	(2.126)	(1.056)	(1.241)	(2.862)	(1.539)	-2.083
Observations	1,889	5,710	2,663	1,889	5,710	2,663	1,889	5,710	2,663	1,889	5,710	2,663	1,889	5,710	2,663
R2	0.282	0.273	0.325	0.261	0.252	0.278	0.234	0.241	0.313	0.219	0.229	0.278	0.284	0.280	0.33

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses. Check Table 1 for description of variables.

ONLINE RESOURCES

Online Resource 1. Compute of Financial Resilience Score

This Online Resource offers specifies on how financial resilience scores was computed based on respondent answers to the 2019/2020 OECD/INFE survey questionnaire. OECD's current methodology draws on 18 dichotomic questions. The financial resilience score ranges from 0 to 18.

Topic	Question Number	Details	Value toward the final score
Keeping control over money	QS1	I keep a close personal watch on my financial affairs	1 point for respondents who put themselves at 4 or 5 on the scale [agree], and 0 points in all other cases.
Taking care with expenditure	QS2_3	Before I buy something I carefully consider whether I can afford it	1 point for respondents who put themselves at 4 or 5 on the scale [agree], and 0 points in all other cases.
Taking care with expenditure	QS2_5	I pay my bills on time	1 point for respondents who put them-selves at 4 or 5 on the scale [agree], and 0 points in all other cases.
Availability of financial cushion	QF13	If you lost your main source of income, how long could you continue to cover your living expenses, without borrowing any money or moving house?	1 point for respondents who put them- selves at 4 or 5 on the scale [three months or more], and 0 points in all other cases.
Coping with a financial shortfall	QF11	Sometimes people find that their income does not quite cover their living expenses. In the last 12 months, has this happened to you, personally?	Record responses as: 0 ='Yes', and 1= 'No'.
Coping with a financial shortfall	QS3_9	I am concerned that my money won't last	1 point for respondents who put themselves at 4 or 5 on the scale [Not agree], and 0 points in all other cases.
Coping with a financial shortfall	QS3_10	I am just getting by financially	1 point for respondents who put themselves at 4 or 5 on the scale [Not agree], and 0 points in all other cases.
Coping with a financial shortfall	QS2_1	I tend to worry about paying my normal living expenses	1 point for respondents who put themselves at 4 or 5 on the scale [Not agree], and 0 points in all other cases.
Planning individual finances	QF5	Some people set themselves financial goals, such as paying university fees, buying a car or becoming debt free. Do you (personally, or with your partner) have any financial goals?	Record responses as: 1='Yes', and0= 'No'.
Fraud awareness	Qprod4_1	{Have you} accepted advice to invest in a financial product that you later found to be a scam, such as a <pyramid> scheme?	Record responses as: 0='Yes', and 1= 'No'.
Fraud awareness	Qprod4_2	{Have you} accidently provided financial information in response to an email or phone call that you later found out was not genuine?	Record responses as: 0= 'Yes', and1= 'No'.
Fraud awareness	Qprod4_3	{Have you} discovered that someone has used your <card> details to pay for goods without your authorisation?	Record responses as: 0='Yes', 1='No.
Fraud awareness	Qprod4_4	{and in the last 2 years have you} queried a transaction listed on your bank or credit card statement that you did not recognise?	Record responses as: 0='Yes', and 1= 'No'.
Fraud awareness	Qprod4_5	{Have you} made a formal complaint about the service you have received from a bank or other financial institution?	Record responses as: 0= 'Yes', and 1= 'No'.
Fraud awareness	Qprod4_6	{Have you} tried to open a bank account and been refused for any reason?	Record responses as: 0= 'Yes', and 1='No'.
Fraud awareness	Qprod4_7	Have you} been refused a claim on an insurance product that you expected to cover you?	Record responses as: 0= 'Yes' and 1= 'No'.
Fraud awareness	Qprod4_8	{Have you} complained to a remittance provider about high charges when sending or receiving money?	Record responses as: 0= 'Yes", and 1= 'No'.
Fraud awareness	Qprod4_9	{Have you} lost money as a result of hackers or phishing scams?	Record responses as: 0= 'Yes', and 1= 'No'.

Online Resource 2. Compute of Financial Literacy Score

This Online Resource offers specifics on how financial literacy (FL) score was computed based on respondent answers to the 2019/2020 OECD/INFE survey questionnaire. OECD's current methodology draws on 21 survey dichotomic questions to score an individual's level of financial literacy detached into three scopes: i) financial knowledge (FK), ii) financial behaviour (FB), and iii) financial attitudes (FA). Scores are computed per individual for each of the three scope areas based on their responses. The FK score ranges from 0 to 7, the FB score ranges from 0 to 9, and the FA score ranges from 1 to 5. As a means of succinct an individual's FL, the three component area scores are summed to assign a composite FL score, ranging from 1 to 21.

Compute financial knowledge score

Topic	Question Number	Details	Value toward final score
Time-value of money	QK2/3	"Imagine that five (brothers) are given a gift of (1,000 USD) in total. If the (brothers) have to share the money equally how much does each one gets? Now imagine that the (brothers) have to wait for one year to get their share of the (1,000 USD) and inflation stays at X percent. In one year's, time will they be able to buy:" a) More with their share of the money than they could today; b) The same amount; c) Or, less than they could buy today. d) It depends on the types of things that they want to buy.	1 for correct responses [c, unless the country indicates otherwise; or d, if mentioned spontaneously]; 0 in all other cases.
Interest paid on a loan	QK4	"You lend (25 USD) to a friend/acquaintance one evening and he gives you (25 USD) back the next day. How much interest has he paid on this loan?" Open numeric response.	1 for correct response [0]; 0 in all other cases.
Interest plus principal	QK5	"Imagine that someone puts (100 USD) into a no fee, tax free savings account with a guaranteed interest rate of 2 percent per year. They don't make any further payments into this account, and they don't withdraw any money. How much would be in the account at the end of the first year, once the interest payment is made? Open numeric response	1 for correct response [102]; 0 in all other cases.
Compound interest	QK6	" ... and how much would be in the account at the end of five years [add if necessary: remembering there are no fees or tax deductions] Would it be:" a) More than 110 USD; b) Exactly 110 USD; c) Less than 110 USD; d) Or is it impossible to tell from the information given	1 for a correct response to QK6 if and only if the response to "Calculation of interest plus principal" (QK5) was also correct; 0 in all other cases.
Risk and return	QK7_1	"I would like to know whether you think the following statements are true or false: a) An investment with a high return is likely to be high risk" True / false question	1 for a correct response;0 in all other cases.
Definition of inflation	QK7_2	"I would like to know whether you think the following statements are true or false: b) High inflation means that the cost of living is increasing rapidly" True / false question	1 for a correct response;0 in all other cases.
Diversification	QK7_3	"I would like to know whether you think the following statements are true or false: c) It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares." True / false question	1 for a correct response;0 in all other cases.

Compute financial behaviour score

Topic	Question Number	Details	Value toward the final score
Responsible has a household budget	QF1 and QF2	"Who is responsible for making day-to-day decisions about money in your household?" a) You make these decisions by yourself; b) You make these decisions with someone else; or c) Someone else makes these decisions." ...and does your household have a budget? A household budget is used to decide what share of your household income will be used for spending, saving, or paying bills." Yes or No.	1 point if personally or jointly responsible for money management [QF1=1 or 2] AND household has a budget [QF2=1]. 0 in all other cases.
Active saving	QF3	"In the past 12 months have you been [personally] saving money in any of the following ways, whether or not you still have the money?" a) Saving cash at home or in your wallet, b) Building up a balance of money in your bank account, c) Paying money into a savings account, d) Giving money to family to save on your behalf, e) Saving in ¡an informal savings club, f) Buying financial investment products, other than pension funds [give examples such as bonds, investment trusts, stocks, and shares], g) Or in some other way (including remittances, buying livestock, gold or property), and h) Has not been actively saving.	1 point for any type of active saving (answers a, c, d, e, f, and g), and relevant options added at the national level. 0 in all other cases. Letting money build up in a bank account is not considered to be active saving (answer b) and gives 0 points towards the score. A refusal to answer is scored as 0.
Considered purchase	QF10 1	"I am now going to read out some statements. I would like to know how much you agree or disagree that each of the statements applies to you, personally. Please use a scale of 1 to 5, where: 1 tells me that you completely agree that the statement describes you, and 5 show that you completely disagree. ("Before I buy something I carefully consider whether I can afford it").	1 point for respondents who chose 1 or 2 on the scale [agree]; 0 in all other cases.
Timely bill payment	QF10 4	Using same question format as QF10 1 ("I pay my bills on time").	1 point for respondents who chose 1 or 2 on the scale [agree]; 0 in all other cases.
Keeping watch of financial affairs	QF10 6	Using same question format as QF10 1 ("I keep a close personal watch on my financial affairs").	1 point for respondents who choice 1 or 2 on the scale [agree]; 0 in all other cases.
Long term financial goal setting	QF10 7	Using same question format as QF10 1 ("I set long term financial goals and strive to achieve them").	1 point for respondents who chose 1 or 2 on the scale [agree]; 0 in all other cases.
Choosing products	Qprod2 and Qprod3	Qprod2: (regarding most recently chosen product)" which of the following statements best describes how you made your choice?" a) I considered several options from different companies before making my decision; b) I considered the various options from one company; c) I didn't consider any other options at all; or d) I looked around but there were no other options to consider. Qprod3: "...and which sources of information do you feel most influenced your decision about which one to take out?" 1 Product-specific information: a) Unsolicited information sent through the post, b) Information picked up in a branch, c) Product specific information found on the internet, d) Information from sales staff of the firm providing the products (including quotes) etc.; 2 Best buy guidance:	Score constructed by first creating two intermediate variables: 1) Qprod D1: "Tried to compare across providers", which takes a value of 1 if variable Qprod2 is equal to 1 or 4; and 0 otherwise. 2) Qprod D2: "Sought information or advice", which takes a value of 1 if yes at Qprod3 b, c, d, i, j, k, l, m or r, and 2 if yes at Qprod3 e, f, g or h; 0 otherwise. The final variable Qb7 new takes a value of 2 if QProd D2 =2 and 1 if QProd D1 =1 or QProd D2 =1; 0 otherwise.

Topic	Question Number	Details	Value toward the final score
		e) Best-buy tables in financial pages of newspapers/magazines, f) Best-buy information found on the internet, g) Specialist magazines/publications, and h) Recommendation from independent financial adviser or broker; 3 General advice: i) Advice of friends/relatives (not working in the financial services industry), j) Advice of friends/relatives (who work in the financial services industry), k) Employer's advice; 4 Media coverage: l) Newspaper articles, m) Television or radio programmes; 5 Adverts: n) Newspaper adverts, o) Television adverts, p) Other advertising; 6 Other: q) My own previous experience, r) Other source, and s) Don't know,	
Borrowing to make ends meet	QF12	The score is based on a derived variable that seeks to identify respondents who are making ends meet without borrowing. It uses QF12 to identify those who have borrowed to make ends meet. "What did you do to make ends meet the last time this happened?" 1 Existing resources: a) Draw money out of savings or transfer savings into current account, b) Cut back on spending, spend less, do without, and c) Sell something that you own; 2 Creating resources: d) Work overtime, earn extra money; 3 Access credit by using existing contacts or resources: e) Borrow from family or friends, f) Borrow from employer/salary advance, g) Pawn something that you own, h) Take a loan from your savings and loans clubs, i) Take money out of a flexible mortgage account, and j) Apply for loan/withdrawal on pension fund; 4 Borrow from existing credit line, k) Use authorised, arranged overdraft or line of credit, and l) Use credit card for a cash advance or to pay bills/buy food; 5 Access additional credit: m) Take out a personal loan from a financial service provider (including bank, credit union or microfinance) etc., n) Take out a payday loan, ando) Take out a loan from an informal provider/moneylender; 6 Fall behind/ go beyond arranged amount: p) Use unauthorised overdraft, q) Pay my bills late or miss payments;7 Other responses: r) Other.	0 if the respondent used credit to make ends meet, that is if he/she responded "Yes" at any of the following QF12 e, f, g, h, i, j, k, l, m, n, o, p, q (or other country specific responses indicating that he/she used credit to make ends meet).; 1 in all other cases, including refusals and respondents who did not have problems in making ends meet.

Compute financial attitude score

Attitude	Question Number	Value toward the final score
"I tend to live for today and let tomorrow take care of itself"	QF10 2	Scale of 1 to 5, where: 1= Completely agree, 2= Agree, 3= Neutral (i.e., Neither agree or disagree), 4= Disagree, 5= Completely disagree. tells me that you completely agree that the statement describes you, and 5 show that you completely disagree.
"I find it more satisfying to spend money than to save it for the long term"	QF10 3	Scale of 1 to 5, where: 1= Completely agree, 2= Agree, 3= Neutral (i.e., Neither agree or disagree), 4= Disagree, 5= Completely disagree. tells me that you completely agree that the statement describes you, and 5 show that you completely disagree.
"Money is there to be spent"	QF10 8	Scale of 1 to 5, where: 1= Completely agree, 2= Agree, 3= Neutral (i.e., Neither agree or disagree), 4= Disagree, 5= Completely disagree. tells me that you completely agree that the statement describes you, and 5 show that you completely disagree.

Online Resource 3. Compute of Financial Inclusion Score

This Online Resource offers specifies on how financial inclusion score was computed based on respondent answers to the 2019/2020 OECD/INFE survey questionnaire. OECD's current methodology draws on 7 questions. The financial inclusion score varies from 0 to 7.

Topic	Question Number	Details	Value toward the final score
Holds payment product	Qprod1_b	Identifies payment products across country level data, such as prepaid cards, current accounts, etc.	Binary variable that takes the value of 1 if any product is held; and 0 otherwise.
Holds saving, investment or retirement product	Qprod1_b	Identifies savings, investment, and retirement product across country level data, such as pensions, investment accounts, savings accounts, savings clubs, bonds, crypto-assets etc.	Binary variable that takes the value of 1 if any product is held; and 0 otherwise.
Holds Insurance	Qprod1_b	Identifies insurance products across country level data such as car insurance, home insurance, etc.	Binary variable that takes the value of 1 if any product is held; and 0 otherwise.
Holds Credit Product	Qprod1_b	Identifies credit products across country level data, such as mortgages, credit cards, microloans, etc.	Binary variable that takes the value of 1 if any product is held; and 0 otherwise.
Aware of at least 5 products	Qprod1_a	Counts all positive responses across Qprod1_a.	Binary variable that takes a value of 1 if at least five positive responses; and 0 otherwise.
Recent financial product choice	Qprod1_c	Identifies individuals that have made at least one product choice	Binary variable that takes the value of 1 for any recent choice; and 0 otherwise.
Relying on family and friends	QF3 and QF12	Identifies people who turn to family or friends to save money for them, or to help them to make ends meet.	Binary variable that takes the value of 1 if saving through family and friends or turning to family and friends to make ends meet; and 0 otherwise.

Online Resource 4. Compute of Socialization Score

This Online Resource offers specifies on how the Socialization score was computed based on respondent answers to the 2019/2020 OECD/INFE survey questionnaire. OECD's current methodology draws on 1 question with possible 9 answers. The Socialization score varies from 0 to 9.

Topic	Question Number	Details	Value toward the final score
Which of the following have you done in the last 7 days?	QD6_1	Read a magazine (printed copy or online)	Record responses as: 1='Yes' or 0= 'No'
	QD6_2	Read a newspaper (printed copy or online)	Record responses as: 1='Yes' or0= 'No'.
	QD6_3	Listened to the radio	Record responses as: 1='Yes' or0= 'No'.
	QD6_4	Used a computer	Record responses as: 1='Yes' or 0= 'No'.
	QD6_5	Accessed the internet	Record responses as: 1='Yes' or0= 'No'.
	QD6_6	Sent or received an email	Record responses as: 1='Yes' or 0= 'No'.
	QD6_7	Watched TV	Record responses as: 1='Yes' or0= 'No'.
	QD6_8	Used a mobile phone	Record responses as: 1='Yes'or 0= 'No'.
	QD6_9	Played a game on an electronic device	Record responses as: 1='Yes' or 0= 'No'.

Online Resource 5: Regression Estimation Results by Financial Resilience elements – Base Line Model.

	Financial Resilience Elements					
	Keeping Control over Money	Availability of financial cushion	Planning individual finances	Taking care with expenditure	Coping with a financial shortfall	Fraud awareness
FL	0.047****	0.021****	0.023****	0.067****	0.067****	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.009)
FI	-0.009***	0.035****	0.028****	-0.033****	-0.033****	0.15****
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.019)
Socialization	0.007***	0.021****	0.019****	-0.005*	-0.005*	0.098****
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.014)
GINI	0.007****	-0.001	0	-0.005***	-0.005***	-0.324****
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.007)
Gender	-0.055****	0.029****	0.004	-0.079****	-0.079****	-0.097*
	(0.009)	(0.009)	(0.009)	(0.012)	(0.012)	(0.052)
Age	0.003****	0.003****	-0.005****	0.005****	0.005****	0.001
	(0)	(0)	(0)	(0.001)	(0.001)	(0.002)
(Reference category: Urban1)						
Urban2	-0.05****	-0.002	-0.035**	-0.012	-0.012	-0.432****
	((0.015)	(0.014)	(0.015)	(0.02)	(0.02)	(0.085)
Urban3	-0.01	0.002	-0.03**	-0.032*	-0.032*	-0.213***
	(0.012)	(0.012)	(0.013)	(0.017)	(0.017)	(0.072)
Urban4	0.039****	-0.001	-0.012	-0.011	-0.011	-0.013
	(0.012)	(0.012)	(0.012)	(0.016)	(0.016)	(0.069)
Urban5	-0.045***	-0.059****	-0.035*	0.046*	0.046*	-0.083
	(0.018)	(0.017)	(0.019)	(0.024)	(0.024)	(0.102)
(Reference category: Tertiary)						
Less than secondary	-0.05**	-0.041**	-0.117****	-0.068***	-0.068***	-0.026
	((0.021)	(0.02)	(0.021)	(0.028)	(0.028)	(0.116)
Secondary	-0.01	-0.088****	-0.08****	0.019	0.019	-0.012
	(0.011)	(0.01)	(0.011)	(0.014)	(0.014)	(0.06)
(Reference category: Employed)						
Self Employed	0.071****	0.141****	0.093****	-0.006	-0.006	-0.093
	(0.015)	(0.015)	(0.015)	(0.02)	(0.02)	(0.085)
Not working	0.037***	-0.022	-0.058****	-0.049***	-0.049***	0.025
	(0.015)	(0.014)	(0.015)	(0.02)	(0.02)	(0.083)
Student	-0.076***	-0.024	-0.115****	-0.188****	-0.188****	0.134
	(0.025)	(0.026)	(0.026)	(0.034)	(0.034)	(0.145)
Retired	0.002	-0.024	-0.085****	0.026	0.026	-0.026
	(0.016)	(0.015)	(0.016)	(0.022)	(0.022)	(0.091)
Constant	-0.252****	-0.312****	0.282****	0.824****	-0.093	17.197****
	(0.051)	(0.05)	(0.053)	(0.07)	(0.132)	-0.293
Observations	9,951	9,132	9,928	10,227	10,245	10,245
R2	0.118	0.128	0.162	0.122	0.129	0.225

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses.

Online Resource 6: Regression Estimation Results by Financial Resilience elements – Interaction with FL.

	Keeping Control over Money	Availability of financial cushion	Planning individual finances	Taking care with expenditure	Coping with a financial shortfall	Fraud awareness
FL	0.064****	0.028**	0.041****	0.041***	-0.095****	0.419****
	(0.012)	(0.011)	(0.012)	(0.016)	(0.03)	(0.065)
FL*GINI	-0.001	0.001	0	0.001	0.005****	-0.012****
	(0)	(0)	(0)	(0)	(0.001)	(0.002)
GINI	0.014***	-0.004	0.003	-0.011*	-0.058****	-0.192****
	(0.005)	(0.004)	(0.005)	(0.006)	(0.011)	(0.025)
Gender	-0.055****	0.031****	0.005	-0.08****	0.155****	-0.093*
	(0.009)	(0.009)	(0.009)	(0.012)	(0.024)	(0.052)
Age	0.003****	0.002****	-0.006****	0.005****	-0.004****	-0.003
	(0)	(0)	(0)	(0.001)	(0.001)	(0.002)
(Reference category: Urban1)						
Urban2	-0.048****	0.006	-0.027*	-0.017	0.113***	-0.375****
	(0.015)	(0.014)	(0.016)	(0.02)	(0.039)	(0.086)
Urban3	-0.01	0.022*	-0.013	-0.047***	0.132****	-0.112
	(0.012)	(0.012)	(0.013)	(0.017)	(0.033)	(0.072)
Urban4	0.04****	0.02*	0.006	-0.022	0.091***	0.066
	(0.012)	(0.012)	(0.012)	(0.016)	(0.032)	(0.069)
Urban5	-0.045***	-0.043***	-0.022	0.034	0.203****	0.007
	(0.018)	(0.018)	(0.019)	(0.024)	(0.047)	(0.102)
(Reference category: Tertiary)						
Less than secondary	-0.057***	-0.101****	-0.168****	-0.037	-0.271****	-0.312***
	(0.02)	(0.02)	(0.021)	(0.027)	(0.052)	(0.114)
Secondary	-0.013	-0.117****	-0.105****	0.036***	-0.283****	-0.166***
	(0.01)	(0.01)	(0.011)	(0.014)	(0.027)	(0.06)
(Reference category: Employed)						
Self Employed	0.071****	0.138****	0.09****	-0.004	0.142****	-0.101
	(0.015)	(0.015)	(0.015)	(0.02)	(0.039)	(0.086)
Not working	0.037***	-0.075****	-0.103****	-0.013	-0.366****	-0.221***
	(0.014)	(0.014)	(0.015)	(0.019)	(0.037)	(0.081)
Student	-0.07***	-0.057**	-0.143****	-0.16****	0.123*	-0.005
	(0.025)	(0.026)	(0.026)	(0.034)	(0.066)	(0.145)
Retired	-0.00001	-0.065****	-0.12****	0.052**	-0.078*	-0.22
	(0.016)	(0.015)	(0.016)	(0.021)	(0.041)	(0.09)
Constant	-0.435**	-0.019	0.370**	0.933****	2.659****	13.743****
	(0.150)	(0.146)	(0.154)	(0.201)	(0.380)	(0.835)
Observations	9,951	9,132	9,928	10,227	10,245	10,245
R2	0.117	0.102	0.148	0.116	0.101	0.216

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses.

Online Resource 7: Regression Estimation Results by Financial Resilience elements – Interaction with FI.

	Keeping Control over Money	Availability of financial cushion	Planning individual finances	Taking care with expenditure	Coping with a financial shortfall	Fraud awareness
FI	0.027	0.093****	-0.033	-0.142****	0.024	0.761****
	(0.024)	(0.022)	(0.024)	(0.032)	(0.059)	(0.129)
FI*GINI	-0.00006	-0.001	0.003****	0.005****	0.006****	-0.018****
	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.004)
GINI	0.006**	0.001	-0.009****	-0.02****	-0.012*	-0.278****
	(0.003)	(0.002)	(0.002)	(0.003)	(0.006)	(0.014)
Gender	-0.059****	0.026***	0.002	-0.085****	0.143****	-0.1*
	(0.009)	(0.009)	(0.009)	(0.013)	(0.024)	(0.052)
Age	0.003****	0.003****	-0.005****	0.006****	-0.002**	-0.002
	(0)	(0)	(0)	(0.001)	(0.001)	(0.002)
(Reference category: Urban1)						
Urban2	-0.048***	0.003	-0.031**	-0.014	0.104***	-0.408****
	(0.015)	(0.014)	(0.016)	(0.021)	(0.039)	(0.085)
Urban3	-0.009	0.009	-0.026**	-0.034*	0.082***	-0.184****
	(0.013)	(0.012)	(0.013)	(0.018)	(0.033)	(0.072)
Urban4	0.048****	0.011	0	-0.005	0.05	0.031
	(0.013)	(0.012)	-0.013	(0.017)	(0.031)	(0.069)
Urban5	-0.046***	-0.053***	-0.034*	0.039	0.161****	-0.046
	(0.018)	(0.018)	(0.019)	(0.025)	(0.046)	(0.102)
(Reference category: Tertiary)						
Less than secondary	-0.135****	-0.11****	-0.179****	-0.153****	-0.261****	-0.214*
	(0.021)	(0.019)	(0.021)	(0.028)	(0.052)	(0.114)
Secondary	-0.04****	-0.115****	-0.101****	-0.008	-0.262****	-0.103*
	(0.011)	(0.01)	(0.011)	(0.015)	(0.027)	(0.06)
(Reference category: Employed)						
Self Employed	0.095****	0.151****	0.103****	0.027	0.176****	-0.086
	(0.015)	(0.015)	(0.016)	(0.021)	(0.039)	(0.085)
Not working	0.024	-0.043***	-0.076****	-0.055***	-0.246****	-0.06
	(0.015)	(0.014)	(0.015)	(0.02)	(0.037)	(0.082)
Student	-0.082***	-0.025	-0.12****	-0.198****	0.237****	0.134
	(0.026)	(0.026)	(0.027)	(0.036)	(0.066)	(0.145)
Retired	-0.01	-0.046***	-0.104****	0.016	-0.005	-0.102
	(0.016)	(0.015)	(0.017)	(0.022)	(0.041)	(0.091)
Constant	0.292****	-0.021	0.929****	1.935****	1.387****	16.328****
	(0.086)	(0.08)	(0.084)	(0.114)	(0.207)	(0.456)
Observations	9,951	9,132	9,928	10,227	10,245	10,245
R2	0.041	0.101	0.141	0.044	0.112	0.222

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses.

Online Resource 8: Regression Estimation Results by Financial Resilience elements – Interaction with Socialization.

	Keeping Control over Money	Availability of financial cushion	Planning individual finances	Taking care with expenditure	Coping with a financial shortfall	Fraud awareness
Socialization	0.088****	0.058****	0.02	-0.028	-0.099**	-0.333****
	(0.018)	(0.017)	(0.018)	(0.024)	(0.045)	(0.096)
Socialization*GINI	-0.002****	-0.001	0	0.001	0.006****	0.014****
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
GINI	0.018****	0.003	-0.001	-0.011***	-0.019***	-0.399****
	(0.003)	(0.003)	(0.003)	(0.004)	(0.008)	(0.017)
Gender	-0.057****	0.029****	0.004	-0.085****	0.148****	-0.098*
	(0.009)	(0.009)	(0.01)	(0.013)	(0.024)	(0.052)
Age	0.003****	0.003****	-0.004****	0.006****	0	0.002
	(0)	(0)	(0)	(0.001)	(0.001)	(0.002)
(Reference category: Urban1)						
Urban2	-0.048***	-0.001	-0.035**	-0.015	0.094**	-0.437****
	(0.016)	(0.015)	(0.016)	(0.021)	(0.039)	(0.085)
Urban3	-0.006	0.017	-0.019	-0.033*	0.119****	-0.17**
	(0.013)	(0.012)	(0.013)	(0.018)	(0.033)	(0.072)
Urban4	0.048****	0.011	-0.002	-0.007	0.055*	0.001
	(0.013)	(0.012)	(0.013)	(0.017)	(0.032)	(0.069)
Urban5	-0.04**	-0.046***	-0.025	0.044*	0.195****	-0.067
	(0.018)	(0.018)	(0.019)	(0.025)	(0.047)	(0.102)
(Reference category: Tertiary)						
Less than secondary	-0.122****	-0.094****	-0.167****	-0.155****	-0.275****	-0.099
	(0.021)	(0.02)	(0.021)	(0.029)	(0.053)	(0.116)
Secondary	-0.04****	-0.114****	-0.103****	-0.013	-0.289****	-0.047
	(0.011)	(0.01)	(0.011)	(0.015)	(0.028)	(0.06)
(Reference category: Employed)						
Self Employed	0.095****	0.154****	0.106****	0.029	0.188****	-0.085
	(0.015)	(0.015)	(0.016)	(0.021)	(0.039)	(0.085)
Not working	0.02	-0.06****	-0.09****	-0.059***	-0.335****	-0.088
	(0.015)	(0.014)	(0.015)	(0.02)	(0.038)	(0.082)
Student	-0.098****	-0.063**	-0.155****	-0.204****	0.098	-0.001
	(0.026)	(0.026)	(0.027)	(0.036)	(0.067)	(0.145)
Retired	-0.007	-0.049***	-0.104****	0.017	-0.041	-0.095
	(0.017)	(0.016)	(0.017)	(0.023)	(0.042)	(0.091)
Constant	-0.134	-0.117	0.649****	1.643****	1.724****	19.970****
	(0.106)	(0.099)	(0.105)	(0.141)	(0.261)	(0.566)
Observations	9,951	9,132	9,928	10,227	10,245	10,245
R2	0.042	0.086	0.132	0.042	0.082	0.221

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses.

Online Resource 9: Regression Estimation Results by Financial Resilience elements– Full Model.

	Keeping Control over Money	Availability of financial cushion	Planning individual finances	Taking care with expenditure	Coping with a financial shortfall	Fraud awareness
FL	0.06****	0.005	0.05****	0.074****	-0.111****	0.37****
	(0.013)	(0.012)	(0.013)	(0.017)	(0.032)	(0.071)
FL*GINI	0	0.001	-0.001**	0	0.005****	-0.011****
	(0)	(0)	(0)	(0.001)	(0.001)	(0.002)
FI	-0.064**	0.07***	-0.09****	-0.185****	0.123*	0.901****
	(0.027)	(0.026)	(0.027)	(0.036)	(0.068)	(0.151)
FI*GINI	0.002**	-0.001	0.004****	0.005****	0	-0.023****
	(0.039)	(0.001)	(0.001)	(0.001)	(0.002)	(0.005)
Socialization	0.1****	0.043**	0.04**	0.026	-0.067	-0.765****
	(0.019)	(0.018)	(0.019)	(0.026)	(0.049)	(0.107)
Socialization*GINI	-0.003****	-0.001	-0.001	-0.001	0.003**	0.027****
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)
GINI	0.022****	0	0.003	-0.011*	-0.067****	-0.255****
	(0.005)	(0.005)	(0.005)	(0.001)	(0.012)	(0.026)
Gender	-0.054****	0.029****	0.004	-0.078****	0.148****	-0.108**
	(0.009)	(0.009)	(0.009	(0.012)	(0.023)	(0.052)
Age	0.003****	0.003****	-0.005****	0.005****	-0.001	0.002
	(0)	(0)	(0)	(0.017)	(0.001)	(0.002)
(Reference category: Urban1)						
Urban2	-0.047***	-0.002	-0.034**	-0.011	0.087**	-0.436****
	(0.015)	(0.014)	(0.015)	(0.02)	(0.038)	(0.085)
Urban3	-0.009	0.002	-0.03**	-0.033*	0.067**	-0.209***
	(0.012)	(0.012)	(0.013)	(0.017)	(0.032)	(0.071)
Urban4	0.041****	-0.00001	-0.012	-0.01	0.029	-0.055
	(0.012)	(0.012)	(0.012)	(0.016)	(0.031(	(0.069)
Urban5	-0.042**	-0.057****	-0.038**	0.042*	0.148****	-0.083
	(0.018)	(0.017)	(0.019)	(0.024)	(0.046)	(0.101
(Reference category: Tertiary)						
Less than secondary	-0.048**	-0.042**	-0.114	-0.062**	-0.117**	-0.068
	(0.018)	(0.02)	(0.021)	(0.028)	(0.052)	(0.116)
Secondary	-0.011	-0.089****	-0.077****	0.024*	-0.202****	-0.048
	(0.011)	(0.01)	(0.011)	(0.014)	(0.027)	(0.06)
(Reference category: Employed)						
Self Employed	0.069****	0.141****	0.091****	-0.008	0.152****	-0.071
	(0.015)	(0.015)	(0.015)	(0.02)	(0.038)	(0.085)
Not working	0.037***	-0.022	-0.057****	-0.047**	-0.203****	0.015
	(0.015)	(0.014)	(0.015)	(0.02)	(0.037)	(0.083)
Student	-0.074***	-0.024	-0.115****	-0.189****	0.24****	0.132
	(0.025)	(0.026)	(0.026)	(0.034)	(0.065)	(0.144)
Retired	0.001	-0.024	-0.086****	0.025	0.042	-0.029
	(0.016)	(0.015)	(0.016)	(0.022)	(0.041)	(0.091)

Constant	-0.740****	-0.325****	0.185	1.016****	2.453****	14.961****
	(0.161)	(0.154)	(0.164)	(0.215)	(0.401)	(0.886)
Observations	9,951	9,132	9,928	10,227	10,245	10,245
R2	0.121	0.128	0.164	0.123	0.133	0.232

*p<0.10, **p<0.05, ***p<0.01, ****p<0.001. Standard errors in parentheses.