A Cross-Country Study of Determinants of Perceived Financial Wellbeing: Impact of Economic Resources, Financial Inclusion, Cultural Norms and Gender Attitudes

A Thesis Submitted

In Partial Fulfillment of the Requirements

For the Degree of

Doctor of Philosophy

By

Rahul Verma
(Roll No.: 19214266)

to the

Department of Management Sciences

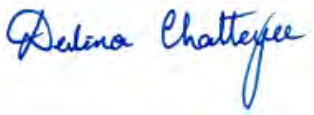
(formerly, Department of Industrial and Management Engineering)

Indian Institute of Technology Kanpur

December, 2025

Certificate

It is certified that the work contained in the thesis titled **"*A Cross-Country Study of Determinants of Perceived Financial Wellbeing: Impact of Economic Resources, Financial Inclusion, Cultural Norms and Gender Attitudes*,"** by **Rahul Verma** (Roll No.: 19214266) has been carried out under my supervision and that this work has not been submitted elsewhere for a degree.



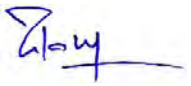
Prof. Devlina Chatterjee
Department of Management Sciences
Indian Institute of Technology Kanpur

December, 2025

Declaration

This is to certify that the thesis titled **"*A Cross-Country Study of Determinants of Perceived Financial Wellbeing: Impact of Economic Resources, Financial Inclusion, Cultural Norms and Gender Attitudes*,"** has been authored by me. It presents the research conducted by me under the supervision of **Prof. Devlina Chatterjee**.

To the best of my knowledge, it is an original work, both in terms of research content and narrative, and has not been submitted elsewhere, in part or in full, for a degree. Further, due credit has been attributed to the relevant state-of-the-art and collaborations (if any) with appropriate citations and acknowledgements, in line with established norms and practices.



Rahul Verma
Roll No.: 19214266
Programme: Ph.D.
Department of Management Sciences
Indian Institute of Technology Kanpur
Kanpur – 208016

December, 2025

Synopsis

Name of Student : Rahul Verma

Roll number : 19214266

Degree for which submitted : Doctor of Philosophy

Department : Department of Management Sciences

Thesis title :

A Cross-Country Study of Determinants of Perceived Financial Wellbeing: Impact of Economic Resources, Financial Inclusion, Cultural Norms and Gender Attitudes

Name of thesis supervisor(s) : Prof. Devlina Chatterjee

Month and year of submission : December, 2025

The global economy has experienced multiple systemic shocks in the last two decades. Notable among these are a) the financial shock of the global financial crisis (2008), b) health shocks such as the COVID-19 pandemic, c) technological shocks such as the emergence of artificial intelligence leading to job losses across industries, and d) political shocks due to the Russia-Ukraine war and multiple conflicts in the MENA (Middle East and North Africa) region. These shocks have transcended geographic boundaries and engendered macroeconomic volatility, leading to widening income disparities and deteriorating economic conditions especially amongst the poor and vulnerable sections of the population. In light of the sustainable development goals 1 and 3 which are concerned with reduction of poverty and ensuring good health and wellbeing for all, household financial well-being has garnered significant attention from both policymakers and the academic community.

In this research, we aim to understand the common factors that contribute to the financial well-being of individuals across countries. We consider this issue from a multi-dimensional perspective. We look at the impact of economic resources, financial

inclusion, digital financial inclusion, cultural norms and gender egalitarian attitudes on three different aspects of financial wellbeing, viz. financial resilience, financial worry and financial satisfaction. We have utilized two large individual-level nationally representative datasets, Global Findex 2014, 2021 (Demirgüç-Kunt et al., 2015, 2021) and the World Value Survey – Wave 7 (Haerpfer et al., 2022).

The first study looks at the household's preferred source of emergency fund, and how this is related to their financial worry and financial resilience. The two dependent variables financial worry and financial resilience capture different aspects of financial wellbeing. Financial worry is related to day-to-day survival (monthly bills) coping with emergencies (medical bills) and saving for their future (retirement). Financial resilience, on the other hand is related to the ability of the individual to bounce back from a sudden economic shock. The key independent variables, i.e. sources of emergency cash include dependence on income, savings, borrowing from family and friends, formal and informal loans, sale of assets. Our data comprises of approximately 16000 households from thirteen emerging economies from the Global Findex Database 2021. Our results provide insight into the relative importance of economic resources, formal financial inclusion, and informal social networks on the financial resilience and worry at a household level.

In the second study (Verma and Chatterjee, 2025), we looked at how institution-level interventions, i.e., financial inclusion, relate to the individual's financial resilience. Specifically, we tried to understand the relative impact of traditional financial inclusion (FI) and digital financial inclusion (DFI) on perceived financial resilience (FR) utilizing the Global Findex data for the years 2014 and 2021 for 13 emerging economies. FI indicators include bank account ownership, savings, borrowing, payments, and receipts. DFI indicators include digital borrowing, receipts, and payments. To address

endogeneity-related concerns, we include instrumental variables for each FI and DFI indicator. Our results indicate that having access to savings plays a larger role in improving individual financial resilience compared to other indicators. Policy implications are discussed.

In the third study, we consider the impact of national culture, which allows us to understand the sociocultural factors that impact the financial well-being of households within a given country. We examine two distinct dimensions of individual financial well-being: financial worry and financial resilience. Using data for households across 62 countries, we build multilevel regression models for financial worry and resilience. We consider Hofstede's (Hofstede et al., 2010) dimensions of national culture to be the main explanatory variables, while individual-level characteristics were included as control variables. Our results indicate that individualism and long-term orientation is positively related to financial resilience and negatively related to financial worry. Power distance and masculinity, on the other hand, is negatively related to financial resilience and positively related to financial worry. Our results were robust to the inclusion of additional control variables, subsamples, and estimation methods. This work is one of the first studies to examine how national culture relates to financial well-being.

In the fourth and final study, we study whether egalitarian gender attitudes are related to an individual's financial satisfaction. Egalitarian gender norms are desirable to ensure equity and diversity within societies for both genders. However, its impact on individual financial outcomes may differ based on the gender of the individual as well as the economic opportunities available to them. Utilizing data from the 7th wave of the World Value Survey, we explore how the egalitarian gender attitudes of individuals relate to their financial satisfaction in the context of lower- and lower-middle-income countries, upper-

middle-income countries, and high-income countries. Our results indicate differences in financial satisfaction based on the level of development in the country.

This thesis studies the impact of several key factors that impact the financial resilience and financial worry of individual households. Each of the four studies in the thesis have utilized large cross-country datasets, across a large cross-section of households from different socioeconomic and demographic sections of the society. Thus, it provides a comprehensive understanding of the factors that impact household financial resilience, worry and financial satisfaction. We find that economic resources are predominantly the most important factor that makes households more resilient and reduces the worry of individuals. Financial inclusion plays a smaller role, and only when they facilitate savings or provide access to quick liquid cash (through credit cards) in times of emergency. Cultural norms do play a role on the level of financial resilience. Egalitarian gender attitudes improve financial satisfaction within more developed nations which provides greater economic opportunities or provide safety nets to its citizens, but not in the case of less developed nations.

Policy implications from the first and second studies are that access to savings and economic resources are the two most important factors for improving financial resilience and reducing financial worry. Economic growth and social security nets in the form of health, food, education, and related services play a larger role than financial inclusion. The third study emphasizes the need to consider national culture while devising policy interventions. Specifically, countries high on individualism can rely on laissez-faire policies, with a support net for extremely vulnerable populations. In collectivist culture, social norms and community leaders are more effective. The fourth study looks at how egalitarian societal norms impact the financial wellbeing of both

genders. Policy implications for this study indicate that equal participation of women in the labor force will increase financial satisfaction when there are sufficient economic opportunities for all. Overall, this thesis contributes to the existing literature by examining the influence of personal, institutional, and societal-level factors on financial well-being of individuals.

Acknowledgement

As I am nearing the final stage of my PhD journey, I find myself looking back at the journey that brought me to this point. For me, this journey took an immensely high level of personal effort; however, it would not have been possible without the support of many. I would like to use this space of my thesis to express my heartfelt gratitude to all those who have inspired, guided, or supported me in whatever way possible.

To begin with, I would like to express my sincere gratitude to my supervisor, Prof. Devlina Chatterjee, for her guidance and supervision. Her guidance and suggestions were crucial in enhancing the quality of my research. I am thankful for her being patient with me, especially during the initial stages of my research work, where I took a long time to identify a suitable research problem.

I am thankful to the people from academia (regrettably, I can't name everyone, as the list is very long) who share their knowledge and experience on the internet and social media platforms without any paywall. I have benefitted immensely from their work.

I would also like to thank the members of my Doctoral Monitoring Committee, Dr. Suman Saurabh and Dr. Harshal Rajan Mulay, for their insightful feedback to help me improve my research work.

I am grateful to Prof. B.V. Phani, Head of the Department of Management Sciences at IIT Kanpur, for ensuring that students have access to required resources for research work and thorough administrative and personal support wherever required.

I am grateful for the financial support received from the Indian Institute of Technology Kanpur, without which it would not have been possible for me to embark on and complete this PhD journey. I am also thankful to the institute administration for

maintaining an environment that is conducive for carrying out the research work with minimum hassle.

I am thankful to the peers from my research group, Amrita Kulshreshta, Angana Baruah, Shakti Chaturvedi, and Venya Srivastava, for sharing their scholarly insights and being cooperative and supportive whenever required.

I am very thankful for the warm and friendly presence of some of the fellow research scholars from the Department of Management Sciences, including Angana Baruah, Krunal Padwekar, Manan Sharma, Pratik Samal, Pushpendra Singh, Shivam Sharma, and Venya Srivastava. Their presence ensured a sense of camaraderie that made this journey an enjoyable one.

I express my deepest gratitude to my mother and father for their boundless patience, unconditional support, and countless sacrifices throughout this demanding journey and the one that preceded it. I owe all my success to them; I just worked for the last few years to reach this destination; they worked their entire lives to ensure I could achieve something like this.

Finally, I bow down before the supreme lord, who always puts me on the right path and gives me hope and strength to carry on, even when the journey seems difficult. This wasn't possible without their blessings.

Rahul Verma
December, 2025

Table of Contents

Certificate ..... **ii**

Declaration ..... **iii**

Synopsis ..... **iv**

Acknowledgement ..... **ix**

List of Table ..... **xiv**

Chapter 1: Sources of Emergency Funds and the Financial Well-being of Households: Some Insights from Emerging Markets **1**

1.1 Introduction 1
1.2 Theoretical Background and Literature Review 4
1.2.1 Sources of emergency funds and financial wellbeing 4
1.2.2 Financial Resilience 5
1.2.3 Financial Worry 7
1.3 Data and Methodology 9
1.3.1 Data 9
1.3.2 Variables 9
1.3.3 Descriptive Statistics 11
1.3.4 Empirical Models for Financial Resilience and Financial Worry 17
1.4 Results and Discussion 18
1.4.1 Financial Resilience 18
1.4.2 Financial Worry 21
1.4.3 Robustness Checks 26
1.5 Conclusion 27
1.5.1 Limitations and Future Research Implications 28

Chapter 2: Relative Impact of Digital and Traditional Financial Inclusion on Financial Resilience: Evidence from 13 Emerging Countries **30**

2.1 Introduction 30
2.2 Literature Review 33
2.2.1 Financial Inclusion – Mechanisms and Outcomes 33
2.2.2 Barriers to Financial Inclusion 35
2.2.3 Digital Financial Inclusion – Mechanisms, Outcomes and Possible Issues 37
2.2.4 Research Gap and Research Questions 40

2.3 Data and Methodology 41
2.3.1 Data Description 41
2.3.2 Measurement of Variables 43
2.3.3 Descriptive Summary: 46
2.3.4 Statistical Model – Pooled Cross-sectional Data 47
2.3.5 Instrumental Variables to Address Endogeneity 52
2.4 Results 55
2.4.1 Results of Regression Analysis 55
2.4.2 Robustness Checks for Possible Bias and Endogeneity in Models 62
2.4.3 Discussion of Results in the Context of Country Level Differences 67
2.5 Conclusion 69
2.5.1 Limitations and Policy Implications: 71

Chapter 3: Financial Resilience and Financial Worry of Households – Role of National Culture: A Cross-Country Analysis 73

3.1 Introduction 73
3.2 Literature Review 76
3.2.1 Financial resilience 76
3.2.2 Financial Worry 77
3.2.3 National Culture 78
3.3 Data and Methodology 83
3.3.1 Data 83
3.3.2 Variables 84
3.3.3 Summary Statistics 86
3.3.4 Empirical Analysis 88
3.4 Results 89
3.4.1 Discussion 97
3.5 Conclusion and Implications 99
3.5.1 Findings and policy implications 99
3.5.2 Limitations and directions for future research 101

Chapter 4: Egalitarian Gender Attitudes and Financial Satisfaction of Households: A Cross-country Study 102

4.1 Introduction 102
4.2 Theoretical Background and Literature Review 104
4.2.1 Financial Satisfaction 104

4.2.2 Gender Egalitarianism in Context of Education, Employment and Leadership (GE-EEL) 106
4.2.3 Egalitarian Gender Attitude and the Financial Satisfaction of Individuals . 107
4.3 Methodology 108
4.3.1 Data and Sample 108
4.3.2 Variables 108
4.3.3 Empirical Analysis 113
4.4 Results and Discussion 114
4.5 Conclusion 122

Conclusion 124

References: 131

Appendix 152

List of Table

Table 1.1: Descriptive summary..... 15
Table 1.2: Ordinal probit regression: Financial Resilience 20
Table 1.3: Ordinal probit regression – Financial Worry (medical expenses) 24
Table 1.4: Ordinal probit regression – Financial Worry (monthly expenses and bills) 25
Table 2.1: Descriptive summary..... 48
Table 2.2: Financial Resilience (pooled panel probit model)..... 60
Table 2.3: Financial Resilience (biprobit model – inclusion of instrumental variables to control for endogeneity) 65
Table 3.1: Descriptive summary..... 87
Table 3.2: Multilevel analysis – Financial Resilience (FR) 93
Table 3.3: Multilevel analysis – Financial Worry for medical expenses (FWM) 94
Table 3.4: Multilevel analysis – Financial Worry for monthly bills and expenses (FWB)..... 95
Table 3.5: Multilevel analysis – Financial Worry due to old age (FWO) 96
Table 4.1: Summary Statistics.....111
Table 4.2: Financial satisfaction – LI LMI countries 118
Table 4.3: Financial satisfaction – UMI countries 119
Table 4.4: Financial satisfaction – HI countries..... 120
Table 4.5: Financial satisfaction – gender based subsamples for LI-LMI, UMI, and HI countries 121

Chapter 1:

Sources of Emergency Funds and the Financial Well-being of Households: Some Insights from Emerging Markets

1.1 Introduction

In the last few decades, the world has experienced some significant shocks to the global economy that disrupted the financial lives of many across the globe; these shocks primarily include the 2008 economic crisis and, more recently, the COVID-19 pandemic. Additionally, economic shocks arising out of war, terrorism, geopolitical skirmishes, natural calamities, and disruption in the labor market due to technological advances (e.g., emergence of artificial intelligence) further complicate the overall economic scenario. These mutually reinforcing shocks create an environment of high levels of macroeconomic uncertainties; households and individuals often find it challenging to adapt to these situations, which ultimately impacts their financial well-being (Boussard et al., 2024).

The concept of financial well-being has lately gained considerable attention in the extant literature, as evident from the work of Valev & Elliot (2014); Netemeyer et al. (2018); Castro-González et al. (2020); and Comerton-Forde et al. (2022). Our definition of financial well-being for the current research is based on the Consumer Financial Protection Bureau (CFPB, 2015) and Salignac et al. (2020), which suggests that "having a buffer in case of unexpected expenses" and "having limited financial worry in the present and in the future" are the two key aspects of financial well-being. In academic literature, these two aspects of financial well-being reflect the "financial resilience" and "financial worry" of individuals, respectively.

As per the Global Findex Database 2021 (Demirgüç-Kunt et al., 2022), almost half of the respondents from developing countries were highly vulnerable to financial shocks, and two-thirds of the respondents were very worried about financial concerns. Such a large number of the least resilient and highly worried individuals present a grim state of financial well-being in the majority of developing countries and pose a major challenge for policymakers to identify the factors that may influence one's state of financial well-being.

The extant literature suggests that the aforementioned two aspects of financial well-being, i.e., financial resilience and financial worry, have gained due attention from the research community, which is evident from the work of Lusardi et al. (2011), Salignac et al. (2019, 2022), De Bruijn & Antonides (2020), and Magwegwe et al. (2023). Furthermore, attempts are being made to identify not just the socio-economic and demographic profile of the most susceptible individuals but also various related factors that might influence one's state of financial well-being, such as financial inclusion (Lusardi et al., 2011; Simonse et al., 2024), financial literacy (Hasler et al., 2023; Kass-Hanna et al., 2022), financial control (Bialowolski et al., 2021), financial self-efficacy (Netemeyer et al., 2018), and financial capability (Magwegwe et al., 2023).

One factor that influences a household's assessment of their financial resilience and state of financial worry, which is not well explored in the existing literature, is where the households get their emergency funds when faced with financial challenges. The sources of emergency funds needed to cope with financial challenges could include drawing on savings, borrowing from family and friends, formal and informal credit, asset monetization, etc. Extant literature has highlighted that the utilization of emergency resources could be a costly or risky avenue for some households, as the expense of the

same could negatively affect the long-term financial well-being of individuals and households (Mitra et al., 2016; Mulungu & Kilimani, 2023). Thus, to contribute to the research on financial well-being, the current study attempts to understand how the households' preferred source of emergency funds may relate to their perceived financial resilience against a moderate shock and their level of financial worry regarding recurrent and unexpected expenses, while we control for financial inclusion, socioeconomic factors, and demography in a cross-country setting. To the best of our awareness, ours is the first study to explore the association of sources of emergency funds with financial resilience and financial worry.

Using data from the World Bank Global Findex Database (2021), a nationally representative survey, this study has contributed to the existing literature by exploring the influence of the sources of emergency funds with financial challenges on an individual's assessment of their financial resilience and financial worry for the sample of fourteen countries (details in section 3.1) classified as emerging markets by the IMF (Duttagupta & Pazarbasioglu, 2021). The fourteen countries under consideration are relevant from a study perspective, as they are developing economies that have demonstrated sustained economic growth in the last few decades, are relevant for the global economic and financial system, and collectively account for fifty percent of the global population and approximately thirty percent of the world's nominal GDP (more than forty percent in terms of purchasing power parity).

Our results showed that among various sources of emergency funds, dependence on personal savings, particularly formal savings, followed by income from work, is most effective in enhancing one's assessment of financial resilience and alleviation of financial worry. Furthermore, to ensure the reliability of our estimates, we performed robustness

checks by employing different estimation methods and sub-samples based on the income category, the education category, and the gender of the respondents. Although there were some heterogeneities, the results were largely consistent across different settings. The remaining parts of this paper are organized as follows. Section 2 provides an overview of the theoretical background and reviews the relevant literature. Section 3 describes the data and methodology employed. Section 4 presents the results and discussion. Section 5 presents a conclusion, discusses policy implications, outlines limitations, and suggests scope for future research.

1.2 Theoretical Background and Literature Review

1.2.1 Sources of emergency funds and financial wellbeing

Households or individuals often confront significant financial challenges. These challenges may emanate from a situation like loss of employment, unexpected health care expenses, maintenance or breakdown of essential equipment required for domestic or commercial activities, crop loss or a loss of livestock, natural disaster, epidemic, or pandemic. Consequently, households or individuals rely on some sources of emergency funds to address all such financial challenges, which can broadly be categorized as budgeting or reprioritization of expenses, drawing upon savings, borrowing from family and friends, availing loans through formal channels or private lenders, income through work, monetization of assets, etc. (Dercon, 2002; McIntyre et al., 2006; Khandker, 2007; Pandey et al., 2007). Extant literature has highlighted that the utilization of the emergency resources could be a costly or risky avenue for some households, as their adoption could make households vulnerable to extreme poverty or force them into poverty traps, thus affecting their well-being negatively in the long term (Mitra et al., 2016; Mulungu & Kilimani, 2023). Although utilization of the emergency resources could be a costly or risky affair for some households, their adoption is not entirely under the household's

control, as it depends on various personal and contextual factors such as income, income buffer or savings, access to formal or informal borrowing, support from family or friends, and availability of social security nets (Bonfrer & Gustafsson-Wright, 2017).

As extant literature suggests, the utilization of emergency resources may alleviate immediate burdens but may compromise long-term financial and non-financial goals. It is desirable to understand these dynamics, which will help in the design or improvement of the intervention meant to support vulnerable populations. Additionally, the extant literature has largely explored the household's reliance on emergency resources in isolation (Bartfeld & Collins, 2017; Bonfrer & Gustafsson-Wright, 2017; Mulungu & Kilimani, 2023), and the evidence of relative relevance is scarce.

Considering the trailing discussion, the authors are motivated to explore the association of the household's preferred source of emergency funds with their financial well-being, as the same is not yet discussed in the extant literature and is relevant from a policy perspective for the design of safety nets and other interventions. For this study, we are particularly interested in understanding how, on a relative scale, the reliance on the emergency funds relates to individuals' assessments of their financial resilience and financial worry.

1.2.2 Financial Resilience

The term "resilience" has its roots in the Latin word "resilire," meaning "to jump back" or "to recoil." Among the earliest evidence of resilience in academia is from the field of ecology (Holling, 1973; Pimm, 1984). Over time, the concept of resilience proliferated to other academic domains, and its definition underwent domain-specific refinements. Though resilience is defined somewhat differently across different domains, it is mostly based on one or all of the following three characteristics: (i) the ability to resist shock, (ii)

the ability to bounce back from shock, and (iii) positive adaptation to (or in anticipation of) shock. The concept of household financial resilience is a relatively newer addition to resilience-oriented research, and it primarily explores the financial hardship experienced by households in the context of the above-mentioned characteristics of resilience.

Individuals may experience financial hardship for various reasons, such as loss of employment or working hours, illness or medical emergency, loss of crops or livestock, natural calamities, economic slowdown, etc. There exists considerable evidence that the vast population, especially those from lower-income groups, females, the undereducated, and the unemployed, particularly from developing economies, are ill-equipped to bear economic shocks (Lusardi et al., 2011; Demirgüç-Kunt et al., 2022). Enhancing the population's resilience against financial adversities is one of the major concerns for policymakers across the globe.

It is important to note that there is no singular way to conceptualize and measure financial resilience. One of the most preferred approaches defines financial resilience as a household's ability to cope with and recover from negative income shocks and measures it utilizing a unidimensional indicator that assesses a household's ability to come up with a fixed amount of money through any source. Many scholars, including Lusardi et al. (2011), Demirgüç-Kunt et al. (2022), and Tahir et al. (2022), have adopted this approach. However, in some cases, authors have employed multiple indicators to assess a household's ability to cope with and recover from negative income shocks (Salignac et al., 2019; Salignac et al., 2022). Further, in some cases, financial resilience has been measured in terms of the objective or subjective vulnerability of households, such as frequency or duration of going without money, difficulties in bill payments, net worth

relative to the general population, and perception related to future financial situation (Bhargava et al., 2018; Sakyi-Nyarko et al., 2022; Dutra et al., 2023).

Heterogeneity in an individual's level of financial resilience is primarily due to various personal and contextual factors. Personal factors include personal savings, possession of monetizable assets, financial and non-financial support from social connections, and access to financial solutions such as formal loans or insurance, i.e., a degree of financial inclusion, financial knowledge, and capability (Klapper & Lusardi, 2020; Demirgüç-Kunt et al., 2022). Contextual factors may include the availability or effectiveness of social security networks, culture, policies, and financial development (Salignac et al., 2019; Klapper & Lusardi, 2020), etc. Ultimately, the cumulative influence of these personal and contextual factors determines an individual's financial resilience.

1.2.3 Financial Worry

"Worry" refers to unremitting thoughts and imagery of issues with probable adverse outcomes, which are often unmanageable and require mental problem-solving (Borkovec et al., 1983). Worry is a future-oriented feeling laden with some form of threat or negative thoughts against which an individual consciously looks for remedial measures. Individuals may experience worry across five major domains: relationships, lack of confidence, aimless future, work incompetence, and financial matters (Tallis et al., 1992). A heightened level of worry may lead to cognitive inflexibility, lack of concentration, performance deficit, exacerbating anxiety and depression, poor problem-solving and inadequate solution implementation (Nolen-Hoeksema et al., 2008), and delayed response or decision-making (Tallis et al., 1991). Among all the forms of worries, stress induced by worries related to personal finance is the most significant one (PwC, 2020).

Financial worry (FW), a sub-concept within the ambit of construct worry, has lately attracted considerable interest in extant literature, and it has been defined by De Bruijn & Antonides (2020) as "repeated and negative thinking about the uncertainty of one's (future) financial situation." Some common reasons for which individuals may experience financial worry are anticipation of unfavorable future events (financial burden due to potential illness or medical treatment) or money management issues (monthly expenses or bills) that might have an adverse influence on one's financial situation in the future.

In the extant literature, FW is observed to be associated with a lower sense of financial well-being (Bayuk & Altobello, 2019), a lower level of life satisfaction (Tay et al., 2016), impeded cognitive function and poor performance at work (Meuris & Leana, 2018), financially risky behavior (Dalton et al., 2020), and higher marital distress (Gudmunson et al., 2007). Additionally, it has also been observed that financial worry is quite pervasive in developing countries (Demirgüç-Kunt et al., 2022). Given the detrimental effects of financial worry and its pervasiveness, it is relevant and desirable to understand what could bring down its high prevalence.

One's state of financial worry could be influenced by the various factors at micro- and macro-levels. These factors include socio-economic and demographic profiles (age, gender, income, and education); personal and psychological factors (self-efficacy, self-control, risk preference, and time preference); financial knowledge and capability; social connections (personal and professional relations); accessibility to financial services such as saving schemes, formal loans, or insurance, i.e., financial inclusion; and national culture and social safety programs at the macro-level (Netemeyer et al., 2018; De Bruijn & Antonides, 2020; Magwegwe et al., 2022).

1.3 Data and Methodology

1.3.1 Data

The data used in this study is from the World Bank's Global Findex Database 2021. The World Bank's Global Findex Database 2021 is a publicly available, nationally representative survey of about 128,000 individuals from 123 countries. Apart from socioeconomic and demographic indicators, it consists of micro-level indicators on the usage of and access to formal financial services, engagement in informal financial activities, sources of emergency funds, and assessment of financial resilience and financial worry.

Additionally, for this study, we have focused on the countries classified as emerging markets by the IMF (Duttagupta & Pazarbasioglu, 2021). The IMF has classified twenty countries as emerging markets based on their scores on a weighted sum of five variables: nominal GDP, population, GDP per capita, share of world trade, and share of world external debt. However, for this study, we have restricted our focus to only fourteen countries[1]. We have excluded countries[2] classified as high-income countries by the Global Findex Database 2021 and the countries for which we did not have adequate data for the desired indicators.

1.3.2 Variables

Financial Resilience

The Global Findex Database 2021 (Demirgüç-Kunt et al., 2022) measured financial resilience using a unidimensional indicator that assesses the difficulty respondents might face in accessing funds equivalent to 1/20th of per capita Gross National Income in local

[1] **Fourteen countries under consideration are:** Argentina, Brazil, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, Philippines, Russia, South Africa, Thailand, and Turkey
[2] **Countries excluded are:** Chile, Hungary, Iran, Poland, Saudi Arabia, United Arab Emirates

currency within the next thirty days in the event of an emergency. Responses were measured on an ordinal scale, with three options: “very difficult,” “somewhat difficult,” and “not difficult.” For analysis, the responses were coded on a scale from 1 to 3, where “1” indicates “very difficult” (least resilient individuals), “2” represents “somewhat difficult” (moderately resilient individuals), and “3” signifies “not difficult” (most resilient individuals).

Financial Worry

Respondent’s level of financial worry was measured for the following two cases:

a. “Not being able to pay for medical costs in case of a serious illness or accident.”

b. “Not having enough money to pay for monthly expenses or bills.”

For measurement, respondents were provided with the ordinal scale to state their level of worry for the above-mentioned issues. On the ordinal scale, respondents were provided with the following three options: "not worried," "somewhat worried," and "very worried." For analysis, the respondent's assessment was coded on a scale of 1-3, where the codes have the following meaning: "1: not worried”, "2: somewhat worried”, and "3: very worried”.

Sources of emergency funds

To access a household's or individual's preferred source of emergency fund, respondents were required to state their preferred source of money to deal with an emergency that requires funds equivalent to 1/20th of per capita Gross National Income in local currency within the next thirty days. For analysis, responses were coded as "0: No Source," "1: Savings," "2: Family, relative, or friends," "3: Money from working," "4: Borrowing from a bank, employer, or private lender," and "5: Selling assets."

Financial Inclusion

The measurement of financial inclusion was based on the conceptualization of Demirgüç-Kunt et al. (2013, 2017), i.e., "the usage of formal financial services." For this study, we included the following indicators of the usage of formal financial services: using a financial account for saving and using a financial account for borrowing. The Global Findex (2021) survey measured formal financial inclusion through self-reported responses to the queries regarding the use of formal financial services. Responses were recorded as "Yes" or "No," and for analysis, responses were coded as "0" and "1" for "No" and "Yes," respectively, for each indicator. Additionally, we included indicators of engagement in informal financial activities (saving, borrowing) from the Global Findex (2021) survey. These indicators were measured and coded in the same way the formal financial inclusion indicators were measured and coded.

Socio-economic and Demographic Variables

We included respondents' socioeconomic and demographic characteristics, as the same were found to be associated with individuals' financial behaviors in various studies. These variables include respondent's age (in terms of age group, coded as:- 1: 15-30; 2: 31-48; 3: 49-65, 4: 66-above), gender (male or female, coded as 0 and 1, respectively), education (primary school or less, up to secondary school, or tertiary level education, coded as 0, 1, and 2, respectively), and income, categorized in terms of quintiles (respondents are grouped into five categories:- 0: lowest 20%; 4: top 20%).

1.3.3 Descriptive Statistics

Table 1.1 presents the descriptive summary of the sample used for the study.

Financial Resilience

Overall, in the case of financial resilience, approximately only one-third (33.8%) of the respondents were confident of their abilities to come up with the required sum of emergency money without difficulties, and a roughly similar number of respondents (32.1%) felt that it would be very difficult to come up with the emergency money. At a country level, a relatively large number of respondents from China (75.5%) and Thailand (59.2%) reported no difficulties in obtaining emergency money; however, these numbers were considerably below the global average for countries like Egypt (14.0%), India (9.4%), Indonesia (12.8%), and Mexico (12.8%). While the lowest percentage of respondents finding it difficult to come up with emergency money were from China (4.7%), Russia (17.7%), and Thailand (15.6%), the percentage was noticeably high for Colombia (43.6%), Egypt (48.1%), India (61.7%), Mexico (42.2%), the Philippines (40.3%), and South Africa (41.7%).

Financial Worry

In the context of financial worry, respondents expressed greater concern about medical expenses (47.2% very worried) than monthly expenses (35.1% very worried). A large proportion of respondents from countries like Brazil (50.3%), Colombia (53.8%), Egypt (54.3%), India (67.8%), Indonesia (62.7%), the Philippines (59.9%), and South Africa (57.3%) reported being very worried about medical expenses. In contrast, these numbers were remarkably low for countries like Argentina (38.7%), China (26.0%), and Thailand (22.2%). Similarly, in the case of financial worry due to monthly expenses, countries with a high number of very worried individuals include Brazil (41.1%), Colombia (44.5%), India (61.9%), Indonesia (47.0%), and South Africa (53.9%), whereas those with a low number of such individuals are Argentina (27.4%), China (13.8%), Malaysia (29.6%), Mexico (28.0%), Russia (21.2%), and Thailand (15.6%).

Sources of emergency funds

The data pertaining to the sources of emergency funds reveals that most individuals rely on their family, friends, and relatives (35.1%). This is followed by income from work (24.2%), personal savings (22.6%), borrowing from banks, employers, and private lenders (8.5%), and asset sales (3.4%). Notably, 6.2% of respondents indicated that they have no financial support to address their challenges. At the country level, except for Brazil (work: 35.7%), China (savings: 40.7%, work: 38.9%), and Malaysia (savings: 44.6%), the individuals from other countries were primarily dependent on their family, friends, and relatives to deal with financial challenges. The reliance on family, friends, and relatives was considerably high for Colombia (46.8%), Egypt (58.8%), Indonesia (46.9%), Mexico (54.1%), and Thailand (56.4%).

Financial Inclusion

In terms of financial inclusion, the practice of formal savings was relatively high in China (54.8%), Malaysia (50.4%), South Africa (46.9%), and Thailand (68.2%). Formal borrowing was more common in Argentina (48.7%), Brazil (53.3%), China (48.1%), and Thailand (45.7%). Regarding informal financial activities, savings through informal means were substantial in Indonesia (18.2%) and South Africa (24.1%). A higher rate of informal borrowing was noted in the Philippines (43.3%) and South Africa (49.0%). Overall, formal avenues for saving and borrowing were found to be more common than their informal counterparts.

Socio-Economic and Demographic Variables

From a socioeconomic perspective, the population was segregated by income quintiles, with variation across quintiles ranging from 15% (1st quintile) to 26% (5th quintile). At the country level, this variation is high for Argentina (11.0% to 30.8%), Brazil (11.3% to

33.1%), the Philippines (14.0% to 30.6%), and Thailand (11.1% to 30.4%). Demographically, approximately half of all respondents were male (49.5%), ranging from a minimum of 39.5% in Mexico to a maximum of 55.2% in Argentina. In the case of age groups, at the overall level, roughly 75% of individuals belong to the young or middle-age groups (15-48), while 25% of them belong to the older age groups (49 and above). Countries with relatively larger proportions of young or middle-age age group populations are China (85.1%), India (79.5%), the Philippines (87.4%), and South Africa (83.7%); whereas, the countries with relatively large older age group populations are Argentina (41.2%), Brazil (32.5%), Egypt (31.6%), Malaysia (37.4%), Mexico (32%), and Russia (33.1%). Countries with a considerably higher number of least educated respondents are India (53.4%) and Egypt (37.5%); in contrast, those with the lowest number of least educated respondents are Russia (3.9%), South Africa (10.3%), Argentina (13.2%), Brazil (14.4%), and the Philippines (14.5%).

As evident from the trailing discussion, a considerable variation exists in the respondents' subjective assessment of financial resilience and financial worry, as well as the factors that may affect these assessments. As discussed in the literature review section, the subjective assessment of respondents is likely to be influenced by several factors under consideration in this study; however, it is quite difficult to draw inferences regarding the simultaneous influence of these factors from summary statistics alone. The following section presents an empirical analysis aimed at exploring the association of financial resilience and financial worry with the sources of emergency funds and other control variables. Additionally, it outlines the methods used to evaluate the robustness of the analysis.

Table 1.1: Descriptive summary

	All	ARG	BRZ	CHN	COL	EGY	IND	IDN	MSY	MEX	PHL	RUS	SAF	THA	TUR
Financial Resilience (observations**)**	16651	827	854	3203	865	888	2386	932	816	829	939	1785	734	835	758
1: Very difficult to come up with emergency money (%)	32.1	27.2	36.9	4.7	43.6	48.1	61.7	37.9	28.9	42.2	40.3	17.7	41.7	15.6	40.4
2: Somewhat difficult to come up with emergency money (%)	34.1	38.8	36.1	19.8	36.5	38.0	28.9	49.4	42.2	45.0	39.5	46.9	29.2	25.3	35.2
3: Not difficult to come up with emergency money (%)	33.8	34.0	27.0	75.5	19.9	14.0	9.4	12.8	28.9	12.8	20.2	35.4	29.2	59.2	24.4
Financial Worry: Medical Expenses (observations**)**	17750	875	885	3263	884	972	2711	961	900	898	943	1809	895	884	870
1: Not Worried (%)	22.0	26.6	19.1	34.3	17.2	14.0	15.0	10.9	19.6	21.5	10.8	15.6	23.8	49.7	21.4
2: Somewhat worried (%)	30.7	34.7	30.6	39.7	29.0	31.7	17.2	26.3	39.0	37.3	29.3	38.8	18.9	28.2	25.6
3: Very Worried (%)	47.2	38.6	50.3	26.0	53.8	54.3	67.8	62.7	41.4	41.2	59.9	45.6	57.3	22.2	53.0
Financial Worry: Monthly Expenses/Bills (observations**)**	17754	878	886	3276	886	962	2715	959	901	898	943	1813	888	872	877
1: Not Worried (%)	32.1	32.8	24.7	57.5	20.5	22.5	17.4	18.2	28.5	30.6	19.0	36.6	25.6	53.8	21.6
2 Somewhat worried (%)	32.8	39.7	34.2	28.8	35.0	40.6	20.7	34.7	41.8	41.4	42.7	42.2	20.5	30.6	31.1
3: Very Worried (%)	35.1	27.4	41.1	13.8	44.5	36.9	61.9	47.0	29.6	28.0	38.3	21.2	53.9	15.6	47.3
Observations	17860	881	888	3291	888	975	2738	966	909	901	943	1814	902	886	878
Emergency Fund: No Source (%)	6.2	4.5	3.2	2.3	1.8	8.4	12.4	3.3	9.5	7.1	0.4	1.4	17.7	4.3	13.3
Emergency Fund: savings (%)	22.6	20.8	19.0	40.7	15.3	10.5	12.6	17.9	44.6	14.0	26.6	15.4	27.9	17.9	13.3
Emergency Fund: Family, Friends & Relatives (%)	35.1	34.6	21.8	15.4	46.8	58.8	35.3	46.9	26.8	54.1	39.3	37.1	29.4	56.4	35.9
Emergency Fund: Work (%)	24.2	22.5	35.7	38.9	15.0	13.2	30.4	20.0	8.0	12.3	22.4	29.3	10.2	4.9	20.2
Emergency Fund: Bank, Employer, Private lenders (%)	8.5	14.8	14.0	2.0	18.4	3.9	5.2	6.0	1.3	10.1	8.6	14.6	11.3	12.4	15.0
Emergency Fund: Asset Sale (%)	3.4	2.8	6.3	0.6	2.7	5.2	4.1	5.9	9.8	2.4	2.7	2.1	3.4	4.1	2.3

(continued on next page)

Table 1.1: (continued)

	All	ARG	BRZ	CHN	COL	EGY	IND	IDN	MSY	MEX	PHL	RUS	SAF	THA	TUR
Financial Inclusion: Formal Savings	31.6	21.1	37.0	54.8	20.2	5.4	15.5	24.7	50.4	12.1	31.6	22.7	46.9	68.2	14.7
Financial Inclusion: Formal Borrowing	30.6	48.7	53.3	48.1	25.3	7.4	13.7	13.4	13.9	15.6	23.9	36.7	24.1	45.7	45.3
Informal Savings	8.8	5.8	6.4	6.1	8.6	11.0	8.9	18.2	5.6	11.2	9.8	1.8	27.4	10.3	6.0
Informal Borrowing	29.7	23.0	23.3	23.2	31.0	35.6	32.6	30.0	16.0	20.5	43.3	29.2	49.0	28.9	40.4
Male (%)	49.5	55.2	52.6	52.9	46.3	51.6	53.8	43.1	46.9	39.5	42.7	46.6	43.1	49.4	55.1
Age: 15-30	35.4	20.4	28.9	39.8	40.9	30.8	44.3	34.8	27.6	35.3	49.9	20.4	39.4	26.5	40.5
Age: 31-48	40.0	38.4	38.5	45.3	33.7	37.6	35.2	39.4	35.0	32.7	37.5	46.6	44.3	49.5	35.9
Age: 49-65	19.6	28.4	26.1	13.1	19.8	25.2	17.9	23.0	27.8	22.3	10.8	24.3	14.1	20.3	17.8
Age: 65-above	5.0	12.8	6.4	1.7	5.6	6.4	2.6	2.8	9.6	9.7	1.7	8.8	2.2	3.6	5.8
Education: Primary or less (%)	23.6	13.2	14.4	18.8	16.3	37.5	53.4	28.9	16.8	28.5	14.5	3.9	10.3	21.6	22.0
Education: Secondary (%)	51.5	63.2	54.4	46.2	66.0	49.8	36.0	66.9	65.2	61.5	57.5	48.7	74.8	26.6	50.6
Education: Tertiary (%)	25.0	23.6	31.2	34.9	17.7	12.6	10.6	4.2	17.9	10.0	28.0	47.4	14.9	51.8	27.4
Income: 1st Quintile (%)	15.1	11.0	11.3	12.9	14.4	16.0	18.6	15.4	18.0	18.1	14.0	15.5	18.1	11.1	14.9
Income: 2nd Quintile (%)	16.8	15.8	14.3	17.4	14.5	14.9	18.5	17.9	16.9	18.9	14.2	19.0	16.2	12.5	16.5
Income: 3rd Quintile (%)	19.1	15.7	14.9	21.4	18.4	19.6	19.5	19.3	20.6	20.1	20.6	18.7	16.6	17.3	17.9
Income: 4th Quintile (%)	22.8	26.8	26.5	24.9	23.8	20.5	21.3	20.5	20.4	20.6	20.6	21.8	19.1	28.8	22.3
Income: 5th Quintile (%)	26.3	30.8	33.1	23.3	28.9	29.0	22.1	26.9	24.1	22.3	30.6	24.9	30.0	30.4	28.4

Abbreviations used in Table 1.1: ALL: All countries; **ARG**: Argentina; **BRZ**: Brazil; **CHN:** China; **COL:** Colombia; **EGY:** Egypt; **IND:** India; **IDN:** Indonesia; **MSY:** Malaysia; **MEX:** Mexico; **PHL:** Philippines; **RUS:** Russia; **SAF:** South Africa; **THA:** Thailand; **TUR:** Turkey

Descriptive Statistics for Financial resilience, Financial Worry: Medical Expenses, and Financial Worry: Bills are based on 16651, 17750, and 17754 observations respectively; for all others variables it is based on 17860 observations.

1.3.4 Empirical Models for Financial Resilience and Financial Worry

As our dependent variables, financial resilience, and financial worry are ordinal variables, we estimated the following ordinal probit regression model to investigate how the preferred source of emergency fund relates to an individual's assessment of their financial resilience or their perceived state of financial worry:

$$\boldsymbol{FR_{ij} = a_o + a_1 EF_{ij} + a_2 X_{ij} + a_3 Y_j + \epsilon_{ij}} \quad 1$$

$$\boldsymbol{FW_{ij} = a_o + a_1 EF_{ij} + a_2 X_{ij} + a_2 Y_j + \epsilon_{ij}} \quad 2$$

Here, $\boldsymbol{FR_{ij}}$ and $\boldsymbol{FW_{ij}}$ denote the indicators of financial resilience and financial worry (model is same for the both cases of worry), respectively, for an individual "i" from country "j". $\boldsymbol{EF_{ij}}$ denotes the preferred source of emergency fund to cope with financial challenges for an individual "i" from country "j". $\boldsymbol{X_{ij}}$ is the vector of control variables, which include indicators of formal and informal financial engagements of an individual (savings, and borrowing), and socio-economic and demographic profile (age, gender, education level, income level). $\boldsymbol{Y_j}$ is a dummy variable for countries, introduced to control for unobserved country level heterogeneity. $\boldsymbol{\epsilon_{ij}}$ denote error term.

Further, to check the robustness of estimates, we estimated the models for financial resilience and financial worry employing different methods of estimation and with sub-samples. Section 1.4.3 discusses the details of the steps taken to ensure the robustness of estimates.

1.4 Results and Discussion

1.4.1 Financial Resilience

Table 1.2 reports the results of the ordinal probit model for financial resilience. Following discussion is primarily based on the findings of model – 2c.

Regarding the role of the preferred source of emergency fund in explaining the heterogeneities in the individual's assessment of their financial resilience, we observed the following order (in decreasing order of ordinal probit estimates): (i.) savings (0.764, $p < 0.001$), (ii.) income through work (0.274, $p < 0.001$), (iii.) borrowing from family, relatives, or friends (0.156, $p < 0.01$), (iv.) borrowing from a bank, employer, or private lender (0.127, $p < 0.01$), and (v.) selling of assets (reference category). The finding that those preferably relying on savings as an emergency fund are most certain of their ability to endure financial shocks is due to the fact that, compared to the other resources, savings are the least risky and cheaper on many accounts, such as direct financial cost, transaction cost, social cost , and private efforts (Lusardi et al., 2011; Mitra et al., 2016).

As discussed in the literature review section, we observed a significant positive association between the indicators of financial inclusion and financial resilience. This outcome aligns with the other literature of similar strands (Prina, 2012; Ruiz Ortega, 2013; Flory, 2014; Pomeranz & Kast, 2022). Particularly, among the indicators of financial inclusion, saving (0.382, $p < 0.001$) is more relevant compared to borrowing (0.144, $p < 0.001$), which seems obvious considering our discussion from the last paragraph.

Regarding the influence of socio-economic and demographic controls, we observed that compared to females, males (0.190, $p < 0.001$) are more likely to be financially resilient. Further, the individuals with a tertiary level of education (0.452, $p < 0.001$) and those

belonging to the fifth quintile of income (0.895, $p < 0.001$) are most resilient compared to the respective reference categories of education (primary and below) and income (quintile 1). In the case of age, compared to the respondents from the reference age group "15-30," respondents belonging to the age group "66 and above" are the most resilient ones (0.250, $p < 0.01$). The results are largely similar to the findings of Lusardi et al. (2011), Salignac et al. (2022), and Hasler et al. (2023), suggesting the reliability of our results.

Table 1.2: Ordinal probit regression: Financial Resilience

	2a			2b			2c		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Savings	1.137	0.052	***	0.944	0.053	***	0.764	0.055	***
Emergency Fund: Through Work	0.559	0.051	***	0.521	0.052	***	0.274	0.054	***
Emergency Fund: Family & Friends	0.195	0.050	***	0.273	0.051	***	0.156	0.053	**
Emergency Fund: Bank or Pvt Lender	0.235	0.057	***	0.171	0.058	**	0.127	0.059	*
Formal Savings				0.564	0.022	***	0.382	0.024	***
Formal Borrowing				0.327	0.021	***	0.144	0.023	***
Informal Savings				-0.066	0.033	*	0.151	0.034	***
Informal Borrowing				-0.343	0.021	***	-0.325	0.022	***
Gender: Male	0.160	0.018	***	0.154	0.019	***	0.190	0.019	***
Age: 31 - 48	0.192	0.021	***	0.165	0.021	***	0.136	0.022	***
Age: 49 - 65	0.178	0.026	***	0.162	0.027	***	0.163	0.028	***
Age: 66 - Above	0.237	0.046	***	0.246	0.046	***	0.250	0.048	***
Education: Secondary	0.346	0.024	***	0.284	0.024	***	0.211	0.027	***
Education: Tertiary	0.851	0.029	***	0.669	0.029	***	0.452	0.032	***
Income Quintile: 2	0.217	0.033	***	0.176	0.034	***	0.193	0.035	***
Income Quintile: 3	0.331	0.032	***	0.291	0.033	***	0.366	0.034	***
Income Quintile: 4	0.497	0.032	***	0.426	0.032	***	0.588	0.033	***
Income Quintile: 5	0.696	0.032	***	0.582	0.032	***	0.895	0.034	***
Country Fixed Effects		No			No			Yes	
Intercept 1|2	0.951	0.058	***	0.906	0.059	***	0.634	0.075	***
Intercept 2|3	2.020	0.059	***	2.033	0.060	***	1.929	0.076	***
AIC	31832			30590			27364		
Observations	16651			16651			16651		

Emergency Fund: "Asset Sales" was used as a reference category; **Gender:** "Female" is used as a reference category; **Age:** "15-30" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

1.4.2 Financial Worry

Table 1.3 and 1.4 reports the results of the ordinal probit model for financial worry – medical expenses, and financial worry – monthly expenses or bills respectively.

In our study, we have considered two cases of worry: financial worry due to medical expenses and financial worry due to monthly expenses or bills, respectively. The two cases of worry differ from each other, as unexpected medical expenses from serious illnesses or accidents are infrequent or unexpected, while monthly expenses or bills occur regularly in a somewhat similar fashion. Considering the differing nature of worries related to these two types of anticipated expenses, we have estimated two distinct probit models, where the dependent variables are "worry about medical expenses" and "worry about monthly expenses and bills." Table 1.3 and Table 1.4 report the results of the ordinal probit model for financial worry due to medical expenses and monthly expenses, respectively.

Comparatively, the estimates for the preferred source of emergency fund were similar in terms of association type, though they differ slightly in their magnitude and significance level. For both cases, it was observed that compared to those relying on their savings for financial emergencies, those dependent on their income from work (medical expenses: 0.138, $p < 0.001$; monthly expenses: 0.190, $p < 0.001$) are slightly more worried, followed by those dependent on their friends and family members (medical expenses: 0.261, $p < 0.001$; monthly expenses: 0.333, $p < 0.001$). The estimates for the other sources were relatively higher than the saving income from work, but they were comparable to each other. Overall, the outcome seems reasonable, as accessing personal savings is more convenient compared to personal efforts, i.e., income from work, and social cost, i.e., borrowing from family, friends, and relatives (Lusardi et al., 2011). Further, in the case

of other emergency resource, the likelihood of being more worried is likely to stem from the fact that utilization of these resources are high-risk and could make individuals or households more vulnerable to future shocks and potentially compromise their long-term well-being (Pandey et al., 2007; Mitra et al., 2016).

In the case of the indicators of financial inclusion, we observed a significant negative relationship between formal savings (medical expenses: -0.158, $p < 0.001$; monthly expenses: -0.261, $p < 0.001$) and financial worries, while the relationship was significantly positive for formal borrowing (medical expenses: 0.064, $p < 0.05$; monthly expenses: 0.090, $p < 0.01$). In the case of the indicators of informal financial acts, the association type was similar to that of formal financial acts; however, the magnitude of estimates was smaller in the case of informal savings (medical expenses: -0.080, $p < 0.05$; monthly expenses: -0.097, $p < 0.01$) and larger for informal borrowings (medical expenses: 0.394, $p < 0.001$; monthly expenses: 0.392, $p < 0.001$). The observed association of savings and borrowing with one's level of financial worry is consistent with the evidence from extant literature (Brown et al., 2005; Simonse et al., 2024; Tay et al., 2017; Xiao & Kim, 2022).

Among the socioeconomic and demographic control variables, it was observed that the males, the highly educated, and those belonging to higher income quintiles are less likely to be worried. However, in case of worry due to medical expenses, those belonging to income quintile 2 were not significantly different from quintile 1 (reference category), indicating higher perceived vulnerability towards medical expenses among lower-income group households. Further, in the case of age, compared to the reference category, those from the age group 31-48 were more worried, while those from the age group 49-65 weren't significantly different in their worry level; however, the individuals from the age

group 66 and above were relatively less worried. These outcomes of socioeconomic and demographic variables are broadly consistent with the findings of De Bruijn & Antonides (2020) and Weissman et al. (2020).

Table 1.3: Ordinal probit regression – Financial Worry (medical expenses)

	3a			3b			3c		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.255	0.025	***	0.149	0.026	***	0.138	0.026	***
Emergency Fund: Family & Friends	0.442	0.024	***	0.254	0.025	***	0.261	0.027	***
Emergency Fund: No Source	0.511	0.043	***	0.347	0.044	***	0.326	0.045	***
Emergency Fund: Asset Sale	0.563	0.053	***	0.433	0.053	***	0.368	0.055	***
Emergency Fund: Bank or Pvt Lender	0.564	0.036	***	0.426	0.037	***	0.389	0.038	***
Formal Savings				-0.293	0.021	***	-0.158	0.022	***
Formal Borrowing				-0.046	0.021	*	0.064	0.022	**
Informal Savings				-0.001	0.032		-0.080	0.033	*
Informal Borrowing				0.427	0.020	***	0.394	0.021	***
Male	-0.131	0.018	***	-0.141	0.018	***	-0.149	0.018	***
Age: 31 - 48	0.030	0.020		0.034	0.021	.	0.059	0.021	**
Age: 49 - 65	-0.014	0.025		0.009	0.025		0.021	0.026	
Age: 66 - Above	-0.348	0.042	***	-0.311	0.042	***	-0.285	0.044	***
Education: Secondary	-0.206	0.024	***	-0.178	0.024	***	-0.154	0.025	***
Education: Tertiary	-0.448	0.027	***	-0.363	0.028	***	-0.262	0.030	***
Income Quintile: 2	-0.076	0.032	*	-0.051	0.033		-0.050	0.033	
Income Quintile: 3	-0.202	0.031	***	-0.179	0.032	***	-0.189	0.032	***
Income Quintile: 4	-0.340	0.031	***	-0.294	0.031	***	-0.323	0.031	***
Income Quintile: 5	-0.541	0.031	***	-0.477	0.031	***	-0.581	0.032	***
Country Fixed Effects		No			No			Yes	
Intercept 1|2	-1.082	0.038	***	-1.127	0.040	***	-0.937	0.059	***
Intercept 2|3	-0.174	0.038	***	-0.195	0.039	***	0.034	0.058	
AIC	35204			34566			33526		
Observations	17750			17750			17750		

Emergency Fund: "Savings" was used as a reference category; **Gender:** "Female" is used as a reference category; **Age:** "15-30" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.4: Ordinal probit regression – Financial Worry (monthly expenses and bills)

	4a			4b			4c		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.307	0.026	***	0.181	0.026	***	0.190	0.027	***
Emergency Fund: Family & Friends	0.566	0.024	***	0.355	0.026	***	0.333	0.027	***
Emergency Fund: Asset Sale	0.725	0.051	***	0.581	0.052	***	0.450	0.053	***
Emergency Fund: Bank or Pvt Lender	0.729	0.035	***	0.567	0.036	***	0.482	0.038	***
Emergency Fund: No Source	0.801	0.043	***	0.618	0.044	***	0.493	0.045	***
Formal Savings				-0.377	0.021	***	-0.261	0.023	***
Formal Borrowing				-0.035	0.021	.	0.090	0.022	***
Informal Savings				0.042	0.031		-0.097	0.032	**
Informal Borrowing				0.424	0.020	***	0.392	0.020	***
Male	-0.080	0.018	***	-0.087	0.018	***	-0.103	0.018	***
Age: 31 - 48	0.017	0.020		0.019	0.020		0.072	0.021	***
Age: 49 - 65	-0.025	0.025		-0.006	0.025		0.039	0.026	
Age: 66 - Above	-0.441	0.042	***	-0.409	0.043	***	-0.335	0.044	***
Education: Secondary	-0.319	0.023	***	-0.289	0.023	***	-0.225	0.025	***
Education: Tertiary	-0.680	0.027	***	-0.590	0.028	***	-0.408	0.030	***
Income Quintile: 2	-0.175	0.031	***	-0.148	0.032	***	-0.155	0.032	***
Income Quintile: 3	-0.316	0.031	***	-0.292	0.031	***	-0.326	0.031	***
Income Quintile: 4	-0.481	0.030	***	-0.433	0.030	***	-0.514	0.031	***
Income Quintile: 5	-0.686	0.030	***	-0.617	0.031	***	-0.795	0.032	***
Country Fixed Effects		No			No			Yes	
Intercept 1|2	-0.895	0.038	***	-0.966	0.039	***	-0.874	0.058	***
Intercept 2|3	0.072	0.038	.	0.031	0.039		0.190	0.058	**
AIC	35469			34687			33030		
Observations	17754			17754			17754		

Emergency Fund: "Savings" was used as a reference category; **Gender:** "Female" is used as a reference category; **Age:** "15-30" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

1.4.3 Robustness Checks

Further, we estimated several other models to test for the robustness of our estimates. First, since our dependent variables, i.e., the subjective assessment of financial resilience and financial worry, are continuous latent constructs measured on an ordinal scale, we thus estimated an OLS regression model, as it is a common practice in literature (Nunn & Wantchekon, 2011; Haushofer & Shapiro, 2016; Kyriopoulos et al., 2018). As a second check, we applied the DAM (dichotomous-around-the-median) approach proposed by Bloem & Oswald (2021). The DAM approach involves defining an ordinal dependent variable into two separate dichotomous variables, DAM Upper [3] and DAM Lower [4]. Third, to ascertain the validity of our estimates for the relatively more vulnerable population, we estimated the ordinal probit model on sub-samples based on gender (females only), education level (primary or below), and income category (quintiles 1,2, and 3).

In the case of OLS-based estimation (Table 1.2.1, 1.3.1, and 1.4.1 in appendix), our estimates were similar to those of models 2c, 3c, and 4c in terms of association type, relative magnitude, and significance level. For the estimates based on the DAM approach (Table 1.2.1, 1.3.1, and 1.4.1 in appendix), we observed some heterogeneity compared to models 2c, 3c, and 4c, which is not unusual (Bloem & Oswald, 2021); however, the relevance of saving and income from work remained unchanged. Additionally, in the case of subsamples (Table 1.2.2, 1.3.2, and 1.4.2 in appendix), we observed similar association

[3] **DAM Upper:** the dichotomous dependent variable equals zero for all the values less than the median value and one for the median value and above (for more details see Bloem & Oswald, 2021).

[4] **DAM Lower:** the dichotomous dependent variable that equals zero for all the values less than or equal to the median value and one for the values above median (for more details see Bloem & Oswald, 2021).

types, relative magnitudes, and significance levels of estimates. Combined together, these robustness checks greatly enhance the reliability of our estimates.

1.5 Conclusion

In the present study, using data from the World Bank's Global Findex Database (2021), we gathered some valuable insights pertaining to the individual's subjective assessment of their ability to deal with financial shocks and their concerns (worries) related to financial management under various situations across fourteen developing countries categorized as emerging market economies by the IMF. These insights are of relevance to policymakers, institutions, and academicians focused on improving the financial well-being of households and individuals.

In the case of our variable of interest, i.e., the preferred source of emergency fund, we observed that whether it is about building financial resilience or easing a sense of financial worry, those dependent on personal savings followed by income from work are relatively better off compared to those dependent on other sources. Further, we observed that borrowing from a financial institution has very little positive influence on boosting an individual's sense of financial resilience or alleviating the feeling of worry. This indicates that policymakers and financial institutions need to work together to promote savings and ensure that borrowing from financial institutions is a suitable option to address financial exigencies.

In the context of financial resilience, previous studies (Lusardi et al., 2011; Salignac et al., 2019; Salignac et al., 2022; Hasler et al., 2023) were mostly limited to a particular country, a geographical region, or a particular group of individuals. Our study overcomes those limitations with cross-country evidence based on a nationally representative sample from fourteen developing countries. Further, in the context of financial worry, the studies

were limited to a particular country or a group of individuals (Litwin & Meir, 2023; DeRigne et al., 2018; De Bruijn & Antonides, 2020; Magwegwe et al., 2022). Ours is the first study to observe this relationship at a cross-country level in the context of emerging market economies. Further, our study revealed a positive relationship between the financial inclusion indicators and financial resilience. This outcome is consistent with the findings of Brune et al. (2016) and Pomeranz & Kast (2022), emphasizing the importance of financial inclusion for financial resilience in a cross-country context.

Further, our study also presents the cross-country evidence of the socio-economic and demographic profiles of vulnerable groups. This study indicated that across the countries young adults, women, less educated individuals, and low-income individuals are relatively more vulnerable, less likely to be financially resilient, and more likely to be financially worried. These results are consistent with results available in the extant literature, indicating the reliability of our results. Moreover, this finding is relevant to policymakers as it highlights the target group for welfare-centric interventions. Finally, our results were robust to the method of estimation, and sub-samples were based on vulnerable populations, i.e., income (quintiles 1, 2, and 3), education (primary and below), and gender (female).

1.5.1 Limitations and Future Research Implications

Alongside some of the contributions of this study, there exist some limitations too. First, while the observed relationship between preferred emergency resources and both financial resilience and financial worry is significant, we must acknowledge that correlation does not imply causation. Nonetheless, the observed association is of some merit from the point of view of academic and policy-specific discourse. Second, the responses to financial resilience and financial worry used in this survey are likely to be

influenced by respondents' subjectivity, as they are based on their self-assessments. Consequently, respondents may incorrectly assess their financial situation, resulting in an under- or overestimated response. In this context, it is pertinent to note that the survey for the dataset was conducted during the pandemic phase, which might have influenced the respondent's self-assessment to some extent. Third, individuals' assessment of their ability to come up with emergency funds may vary if there is a variation in the amount of emergency money required or the duration within which the money is required. It is therefore desirable that future surveys should measure the preferred source of emergency funds under varying conditions. Fourth, future surveys or studies should incorporate different measures of resilience and worry. Adopting different measures of financial resilience and worry within the same surveys or studies will help ascertain the robustness of estimates. Fifth, various factors like personality traits, money attitudes, financial literacy, and financial capability that are known to influence financial behavior are not included in the current study, as these were not measured during the Global Findex 2021 survey. It is desirable that future surveys or studies should include these factors. Sixth, we have not checked for the association between employment status and our dependent variables, as the reason for not being employed was not measured during the survey stage. Unemployed respondents, including homemakers, students living as dependents, and retired individuals relying on savings or also living as dependents, are more likely to respond similarly to employed individuals (Magwegwe et al., 2022), which may lead to conflicting estimates (De Bruijn & Antonides, 2020).

Chapter 2:

Relative Impact of Digital and Traditional Financial Inclusion on Financial Resilience: Evidence from 13 Emerging Countries

2.1 Introduction

The global economy has faced multiple shocks in the twenty first-century including the financial crisis of 2008, the COVID-19 pandemic of 2020, political instability in the Middle-east and North African region, and the Russian-Ukrainian conflict of 2022. Additionally, severe weather patterns due to climate change has increased volatility in global supply chains; the advent of artificial intelligence has resulted in large-scale layoffs in the corporate world, and geopolitical tensions have led to an increase in economic fragmentation (International Monetary Fund, 2023). In aggregate, these events have led to loss of employment, rising commodity prices, and inflationary pressures across the world (Di Battista et al., 2023). The impact of these shocks has been particularly severe for sections of society that are marginalized and have limited access to educational, health, and economic resources (Crossley et al., 2021; Dang and Nguyen, 2021). According to World Bank data, the number of people living in extreme poverty rose by roughly 100 million to nearly 700 million[5] from 2019 to 2022, and inequality has risen both within countries and across countries[6]. In the backdrop of such widespread economic upheavals, financial resilience of individual households has emerged as an important adaptive factor that can protect them from falling into a poverty trap (Bowen et al., 2020).

[5] **Source:** World Bank Group: Poverty & Inequality Update: Spring 2024 https://thedocs.worldbank.org/en/doc/69d007a1a509633933b92b3804d0e504-0350012024/original/poverty-and-inequality-spring-update-6.pdf

[6] **Source:** https://www.unescap.org/sites/default/d8files/07Chapter5.pdf

Financial resilience is defined as "*an individual's ability to access and draw on internal capabilities and appropriate, acceptable, and accessible external resources and supports in times of financial adversity*" (Salignac et al., 2019, page 21). Salignac et al. (2019) proposed a multidimensional framework for financial resilience that included four distinct components viz. (i) economic resources, (ii) access to financial products and services, (iii) financial knowledge and behavior, and (iv) social capital. One of the important factors included in this framework is access to financial products and services, which is also known as financial inclusion. Financial inclusion has been defined by the World Bank as "individuals and businesses having access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way."[7] Financial inclusion facilitates individuals in day-to-day transactions, in the seamless moving of money through bank transfers, in making investments and purchasing insurance. Combined with financial knowledge, financial inclusion bolsters overall financial efficacy that enables individuals to plan for their future and have the ability to absorb and adapt to unanticipated shocks.

In recent times, the introduction of fintech has facilitated digital payments and digital transactions that has increased the penetration of financial services even among unbanked households. The Global Partnership for Financial Inclusion - GPFI (2020) describes digital financial inclusion broadly as "the use of digital financial services to advance financial inclusion."[8] Digital finance covers a broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances,

[7] **Source:** Financial Inclusion Overview – World Bank
https://www.worldbank.org/en/topic/financialinclusion/overview
[8] **Source:** G20 2020 Financial Inclusion Action Plan
https://www.gpfi.org/sites/gpfi/files/sites/default/files/G20%202020%20Financial%20Inclusion%20Action%20Plan.pdf

and insurance. The concept also includes mobile financial services. Digital financial inclusion has become an important aspect of overall financial inclusion and may play an important role in the access to cash-free transactions that may increase the financial resilience in the event of an unanticipated economic shock (Demirgüç-Kunt et al., 2022).

While the impact of traditional and digital financial inclusion has been studied individually (Mfossa, 2019), there is a paucity of studies that looks at the relative impact of digital financial inclusion and traditional financial inclusion in fostering financial resilience. Further, while there have been some studies that have looked at financial resilience for individual countries, such as Kenya (Bharadwaj et al., 2019), China (Du et al., 2023), Malaysia (Hamid et al., 2023), Vietnam (Do, 2023), there are few that have studied the impact across a cross-section of countries or across different time-periods. These research gaps motivate the current study. We are primarily interested in understanding the relative impact of digital and traditional financial inclusion on financial resilience across a range of lower-income emerging markets.

Less developed countries report low levels of traditional and digital financial inclusion (Khera et al., 2022). Despite recording higher levels of economic growth in terms of GDP, the persistence of income inequality results in high levels of financial vulnerability within emerging markets (Fernández-López et al., 2024). In recent times, COVID-19 had a particularly severe impact on poorer nations, and increased the vulnerability and financial distress of the poorer sections of the population (Gupta et al., 2021). For these reasons, we were interested in understanding whether the self-reported levels of financial resilience of individuals in the emerging markets have been affected by the levels of financial inclusion and digital financial inclusion. We used household-level data from the Global Findex database. Our data includes households from thirteen emerging markets

viz., Argentina, Brazil, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, the Philippines, Russia, South-Africa and Thailand, surveyed in 2014 and 2021, which span the COVID-19 pandemic.

The primary research question that we seek to answer is as follows. What is the relative impact of digital financial inclusion and traditional financial inclusion on the self-reported financial resilience amongst households across several emerging countries? Variables such as having a bank account, saving and borrowing from banks are considered to be measures of traditional financial inclusion, while having a credit card, debit card, or mobile money accounts are part of digital financial inclusion. Our results indicate that the most important factors that increase financial resilience are (i) having savings, (ii) having a bank account, (iii) making payments through the bank account, (iv) making digital payments, and to a much smaller extent (v) digital borrowing i.e., credit card usage. Informal savings, though significant, have a small effect size; however, the effect of informal borrowing was found to be insignificant. This underlines the importance of financial inclusion. Country-level differences in financial resilience and both traditional and digital financial inclusion are reported.

2.2 Literature Review

2.2.1 Financial Inclusion – Mechanisms and Outcomes

Several authors have studied the impact of financial inclusion on economic growth and the attainment of sustainable development goals at the macroeconomic level (Sarma and Pai, 2011; Duvendack and Mader, 2020; Kara et al., 2021). However, in this study, we are interested in individuals' financial resilience. Below, we provide a review of some mechanisms by which financial inclusion through banks and micro-finance organizations may lead to better economic outcomes for an individual household.

Financial inclusion impacts economic outcomes by facilitating household savings. The creation of an economic buffer increases the ability of individuals to manage risk. Access to formal financial institutions mobilizes household savings (Morgan and Long, 2020). Formal savings mechanisms enable consumption smoothing (Pomeranz and Kast, 2022) and consumption diversification (Chakrabarty and Mukherjee, 2021). Do (2023) found that risk-averse households in Vietnam used savings as an absorptive strategy and diversification of income portfolios as an adaptive measure. Access to micro-financial services in Sri Lanka allowed households to manage their risk (Bendig and Arun, 2011) and reduced reliance on debt (Atkinson et al., 2013). Financial inclusion led to a reduction in household poverty in the present (Burgess and Pande, 2005; Mohammed et al., 2017; Koomson et al., 2020; Churchill and Marisetty, 2020; Gutiérrez-Romero and Ahamed, 2021); as well as a reduction of vulnerability to poverty in the future (Jiang and Liu, 2022; Koomson et al., 2020). Since financial inclusion benefits poor households more than middle-class or wealthy households, it leads to a decrease in income inequality (Zhang and Posso, 2019; Mushtaq and Bruneau, 2019; Kling et al., 2022).

Financial inclusion also provides access to low-cost borrowing for households as well as small-scale enterprises. Financially excluded individuals have to rely on high-interest-rate loans from informal sources that may lead to debt traps (Dejuán, 2013). By providing access to loans and insurance services, financial inclusion increases women's empowerment (Ashraf et al. 2010; Pal et al., 2022), which leads to an improvement in educational and health outcomes for the entire family (Hendriks, 2019). Financial inclusion also facilitates the transfer of remittances from family members with a lower probability of loss through informal channels (Anzoategui et al., 2014). Loans from financial institutions enable small and medium-scale entrepreneurs to access capital at reasonable interest rates (Dupas and Robinson, 2013; Brune et al., 2016; Jiang and Liu,

2022). Financial inclusion is important for financial resilience in the event of a sudden shock such as COVID-19 (Ansar et al., 2023; Turiansky et al., 2021, Kim et al., 2024). It has had a greater impact on the financial resilience of rural households compared to urban households (Koomson et al., 2020; Jiang and Liu, 2022) and households headed by women (Koomson et al., 2020).

Thus, we conclude from a review of the extant literature that financial inclusion could improve financial outcomes at the household, societal, and country levels by providing formal mechanisms of saving, borrowing, remittances, access to capital, insurance services, and diversification of risk at the household level (Churchill and Marisetty, 2020; Sakyi-Nyarko et al., 2022). The ability to save and invest in human capital and entrepreneurial activities led to the reduction of poverty, vulnerability, and inequality at the societal level. Financial inclusion boosts financial resilience (Sakyi-Nyarko et al., 2022) and reduces household poverty (Dogan et al., 2022). By bringing informal financial activities within the ambit of the formal financial sector, financial inclusion leads to the mobilization of funds for capital investment that has spurred economic growth in many countries (Van et al., 2021; Ratnawati, 2020). However, despite the benefits of financial inclusion, a large section of the population in less developed countries continue to be financially excluded (Cicchiello et. al, 2021). In the following section, we discuss some of the existing barriers to financial inclusion.

2.2.2 Barriers to Financial Inclusion

As has been outlined above, inclusion in the financial sector is critical for ensuring that the economically vulnerable and marginalized segments of society have reliable and inexpensive access to essential financial services. Despite the theoretical and empirical literature pointing to the positive outcomes related to financial inclusion, a large section

of households in poorer countries continue to be financially excluded (Koku, 2015). Barriers to financial inclusion could be related to demand-side factors or supply-side factors.

Leyshon and Thrift (1995) identify five different demand side factors that lead to financial exclusion, viz. (i) *access exclusion* which is lack of physical access to banking services; (ii) *condition exclusion* which is due to individuals not being able to meet conditions set by the financial institutions (iii) *price exclusion* where certain sections of society are excluded due to the high prices of financial products and services; (iv) *marketing exclusion* related to certain sections of society being excluded due to the perceived risk or high transaction costs and (v) *self-exclusion* driven by perceived procedural difficulties and social or cultural factors. Cultural factors include a distrust of the formal financial sector or discrimination based on gender, race, literacy, or occupation levels. Gender-related discrimination is a significant barrier to the financial inclusion of women (Demirgüç-Kunt et al., 2013). Singh (2021) and Kumar et al. (2019) have empirically validated the existence of demand-side constraints in the Indian context.

Supply-side constraints to universal financial inclusion include two main factors, cost and risk. The first and the most important supply-side barrier to financial inclusion lies in the relatively high cost of providing secure banking services to rural or underserved populations (Markose et al., 2022). Servicing savings accounts in rural areas where deposits may be small and volatile leads to high transaction costs (Choudhury, 2004). Secondly, systemic and idiosyncratic risks faced by creditors due to problems of information asymmetry can lead to adverse selection, moral hazard, and legal difficulties in contract enforcement (Choudhury, 2004). Lack of knowledge of informal financial networks and local cultural norms may make it difficult for formal financial institutions

to attract customers, cater to the specific needs of the community, and assess individual creditworthiness while approving loans (Oke and Adamson, 2023).

Technological advances have removed several of the aforementioned demand and supply-side barriers to financial inclusion. The mechanisms of removal of barriers and the associated benefits for previous sections of society that were financially excluded are discussed in the following section.

2.2.3 Digital Financial Inclusion – Mechanisms, Outcomes and Possible Issues

Digital financial inclusion is defined as the use of digital technology to provide access to formal financial services to underserved and excluded populations (Lauer and Lyman, 2015). Aziz and Naima (2021) conceptualized digital financial inclusion as being the intersection of three different kinds of inclusive processes viz. financial inclusion, digital inclusion, and social inclusion. While basic financial needs are met by traditional financial products and services, digital financial services cater to additional consumer needs such as (i) convenience, (ii) round-the-clock access, (iii) security against theft, (iv) protection against the risk of counterfeit currency that might be encountered with fiat money and (v) greater autonomy and control over financial decisions (Akanfe, 2022). In addition to the digitalization of traditional services provided by traditional financial institutions such as banks, investment, and insurance companies, mobile applications play an important role in digital financial inclusion. With the widespread adoption of mobile phones and the availability of internet connectivity, digital channels such as mobile wallets and digital payments have assumed an important role in financial inclusion (Afjal, 2023; Shaikh et al., 2023). In particular digital financial inclusion has risen significantly after the COVID-19 pandemic (Dluhopolskyi et al., 2023; Nandru et al., 2024).

Digital technologies remove supply-side barriers to traditional financial inclusion via three important mechanisms. First, automation of routine banking services e.g. disbursement of cash through automated teller machines reduces transaction costs (Ozili, 2021). Second, the utilization of digital infrastructure and advances in encryption technologies enable quick and secure communication between the bank, the account holder, and third parties (Bashminova et al., 2024). Cashless transactions reduce several frictions faced by small and medium-scale enterprises such as delays in payment, lack of trust in case of bounced checks, and the need to carry different denominations of cash (Alwahidin et al., 2023). The third mechanism by which DFI overcomes supply-side barriers is better risk assessment and management. The ability of digital infrastructure to store and analyze large amounts of consumer data leads to better assessment of risk profiles and improving credit decisions even for consumers with no or low credit history (Gao et al., 2024).

Digital financial inclusion also removes demand-side barriers by increasing the reach of financial services through mobile payments and mobile wallets. DFI can have a higher impact on financial resilience compared to traditional financial resilience because of two reasons. First, the services offered by financial institutions are now available 24/7 over the internet or even using a smartphone, which is critically important during emergencies, e.g., at night or during a sudden illness. Second, many poorer people who might not qualify for services from financial institutions may nevertheless have access to mobile money. Since mobile devices have gained wide acceptance among all sections of society, the availability of user-friendly mobile payment apps removes several barriers to financial inclusion related to gender (Kim, 2022), income (Ahmed et al, 2020), and education (Bandura & Ramanujam, 2022).

Several authors have studied the impact of digital financial inclusion on financial well-being. DFI has been found to increase household income (Li and Liu, 2023) and reduce vulnerability to relative poverty (Liu and Guo, 2023). DFI increases wage income by enhancing residents' household employment levels (Li and Liu, 2023). It increases business income by promoting residents' entrepreneurship (Yang et al., 2023). DFI also increases investment incomes by improving financial market participation (Du et al., 2023; Li and Liu, 2023). It also increases household consumption (Li and Liu, 2023) and leads to consumption smoothing over time (Lai et al., 2020). Hess et al., (2021) found that strengthening digital connectivity, increasing digital literacy, and building appropriate financial infrastructure mitigates issues related to gender disparities in financial inclusion (Yang et al., 2023). Digital technologies provide liquidity in transactions and help the unbanked send and receive cashless payments in a secure and timely manner (Ayadi and Shaban, 2020; Block, 2022). Du et al. (2023) found that digital financial inclusion increased the probability of household well-being in China through the mechanism of financial participation.

Bharadwaj et al. (2019) and Mfossa (2019) looked at data from Kenya and Cameroon respectively and found that access to loans through mobile money accounts reduced the probability of the household having to forego important expenditures after facing a shock. Yadav and Shaikh (2023) found digital payments, high credit-deposit ratio, and credit lines positively influence consumer's financial resilience. Using longitudinal data recorded by the China Household Finance Survey (CHFS) in 2015, 2017, and 2019, Wu et al., (2023) found that digital payments can significantly increase the development resilience of rural households. Sakyi-Nyarko et al., (2022) used data from Ghanaian households and found that savings and formal account ownership yield a more pronounced resilience effect rather than mobile money (m-money) in Ghana.

While digital financial inclusion offers many advantages, it is important to note that there may be associated problems that emerge from the use of digital money viz. over-indebtedness, lack of caution, post-contract exploitation, fraud, and discrimination (Garz et al., 2021). Ozili (2020) points out several issues, including the measurement of FI, the implementation of FI policies, and the impact of extreme financial inclusion on the overall financial system. Ozili (2022) indicates the risks associated with unregulated DFI including the entry of non-financial firms into the financial industry, increase in digital transaction costs, lack of data security and data privacy, agent-related risks, technology-related risks, and lack of digital literacy which impedes the societal benefits of digital financial inclusion. Kowaleski and Pisany (2021) indicate that the impact of DFI is ambiguous because of the digital divide, that excludes poor and uneducated individuals. Diniz et al., (2012) pointed out several possible downsides of digital finance including over-indebtedness of the poor, reproduction of social exclusion practices, and reinforcement of power asymmetries. Further, they point to the potential risks of DFI through automated credit decisions using black-box models that might reduce transparency and result in systematic discriminatory biases built into financial systems.

2.2.4 Research Gap and Research Questions

As has been discussed in the review of the extant literature, several studies have analyzed the impact of traditional financial inclusion on economic outcomes at the country level (Swamy, 2014; Duvendack and Mader, 2020; Ratnawati, 2020; Park and Mercado, 2021; Van et al., 2021). Similarly, there is a stream of literature that looks at the impact of digital financial inclusion on economic growth and economic resilience at the country level (Liu et al., 2021; Ahmad et al., 2020; Ayadi and Shaban, 2020). Some papers discuss the impact of financial inclusion (Swamy, 2019; Sakyi-Nyarko et al., 2022; Kass-Hanna et al., 2022) or digital financial inclusion (Liu et al., 2024; Yang ety al., 2022) on the resilience of

individual households. However, none of the extant papers have looked at the relative impact of financial inclusion and digital financial inclusion on household resilience across several emerging markets. This is the research gap that we seek to address in this paper. Given that there may be some regulatory risks, data security risks, technology risks and transaction costs associated with DFI, which could lead to possible consumer protection issues, it is important to critically evaluate the relative impact of DFI on financial resilience compared to FI, and suggest appropriate consumer financial protection regulations. Hence, the specific research question that we address is: what is the relative impact of financial inclusion and digital financial inclusion on perceived financial resilience of individual households within emerging markets.

2.3 Data and Methodology

2.3.1 Data Description

For the current study, we have used the Global Findex Database published by the World Bank for the years 2011, 2014, 2017, and 2021 (Demirgüç-Kunt et al., 2015, 2022). It consists of data from a nationally representative survey of randomly selected adults of age 15 and above from over 120 countries across the world. It provides various indicators related to financial inclusion, and offers insights related to financial resilience. It has been used by Demir et al., (2020); Fungáčová and Weill, (2022); Alhassan et al. (2019); Loaba (2022); Khera et al., (2022); Alshamsan et al. (2017); and Sarkar et al. (2023) among others. Since, the Global Findex Database provides a reliable source of detailed household level data for financial resilience as well as financial inclusion for the emerging countries that we were interested in, we used this data for our study.

An IMF study by Duttagupta and Pazarbasioglu (2021) lists 20 countries as emerging market economies based on the following three factors: (i) systemic presence (nominal

GDP, population, and share of exports in global trade); (ii) market access (share of a country's external debt in global external debt) and (iii) income level (GDP per capita in nominal US dollars). Together, these twenty countries[9] represent 34% of global GDP (nominal, in USD) and are also included in the emerging market indices of J.P. Morgan and Bloomberg. Amongst the 20 emerging markets, the following five countries, viz. Chile, Hungary, Poland, Saudi Arabia, UAE had relatively higher levels of income measured in GDP per capita (Demirgüç-Kunt et al., 2022). Since we were primarily interested in the financial resilience from lower and lower-middle income countries, we excluded these from our study. Amongst the remaining 15 countries, Iran, and Turkey were not included in this study due to lack of appropriate data.

Thus, we include household level data from the following 13 countries viz. Argentina, Brazil, China, Colombia, Egypt, India, Indonesia, Malaysia, Mexico, the Philippines, Russia, South Africa, and Thailand. This set includes the BRICS countries, some countries that have recently experienced high inflation (Argentina) or economic shocks (Brazil, Egypt) and other countries that have witnessed a moderate rate of economic recovery in south-east Asia. We used Global Findex data from the years 2014 and 2021. Despite the availability of data for 2017, we did not include this in our study since the main variables of interest i.e., financial resilience was measured differently in 2017 compared to 2014 and 2021[10].

---

9 The twenty countries include Argentina, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Indonesia, Iran, Malaysia, Mexico, the Philippines, Poland, Russia, Saudi Arabia, South Africa, Thailand, Turkey, and the United Arab Emirates.

10 Financial resilience was measured as follows in Global Findex Database 2014: "Now, imagine that you have an emergency and you need to pay [insert 1/20 of GNI per capita in local currency]. How possible is it that you could come up with [insert 1/20 of GNI per capita in local currency] within the NEXT MONTH? Is it very possible, somewhat possible, not very possible, or not at all possible? 1 Very possible, 2 Somewhat possible, 3 Not very possible, 4 Not at all possible, 5 (DK), 6 (Refused)". It should be noted that there were several options offered to the responder to

2.3.2 Measurement of Variables

Financial Resilience

The Global Findex Database 2014 and 2021 measures financial resilience through a self-reported assessment of an individual's ability to come up with an emergency fund equivalent to 1/20 of gross national income (per capita) of the respective country within the next thirty days. Respondents were provided with the following six options: not possible, very difficult, somewhat difficult, not difficult, don't know, and refused. Since the measure for financial resilience depends on the respondent's own perception of their ability to secure funds in the event of an emergency, it is assumed that they would take into consideration all possible sources of funds including their own savings, and possibility of borrowing from formal sources or from friends. Thus, this would encompass all four components of the financial resilience framework proposed by Salignac et al., (2019), viz. economic resources, financial inclusion, financial knowledge and social capital. In this study, we are primarily interested in the resilience of the poorest and most marginalized sections of society. We are interested in how financial inclusion and digital financial inclusion may help the most vulnerable sections of society. For this reason, we created a variable of financial resilience which took a value of 0 for those individuals who responded that it would "not be possible" for them to come up with the required amount of money, all other responses were coded as 1, except those that responded "don't know" or "refused" which were omitted.

---

indicate different levels of certainty about being able to procure the emergency funds. This was similar to the options offered in 2021. In 2017, only a binary option was offered. Hence comparisons could not be made since data collection was not done in a similar manner.

Digital Financial Inclusion

The primary variable of interest in our models is digital financial inclusion. We included three measures of digital financial inclusion, viz. digital borrowing (borrowing through credit cards) and making and receiving digital payments (online payments, payments through cards or mobile accounts)[11]. One of the critical barriers to the usage of digital financial services is lack of digital literacy (Kowaleski and Pisany, 2021). Hence just access to mobile wallets or digital facilities is not enough to ensure digital financial inclusion (Kass-Hanna et al., 2022). Hence, actual reported usage of digital financial services (which requires both financial inclusion as well as digital inclusion) is a better indicator of digital financial inclusion. Hence the DFI indicators chosen for our model reflect actual usage through transactions, borrowing and savings.

Financial Inclusion

We have included several control variables to remove omitted variable bias and to improve the explanatory power of the models. The first category of control variables was related to access to traditional financial inclusion. We included five indicators related to traditional financial inclusion viz. having a bank account and using that bank account for payments, receipts, saving and borrowing. While the first indicator is access-centric, i.e., the ownership of a bank account at a formal financial institution, the other four are usage-centric indicators: transactions such as payments and receipts, and the ability to save and borrow from a formal financial institution.

---

[11] We constructed dummy indicators for Digital Financial Inclusion using raw variables from the Global FINDEX database related to the usage of digital financial services as defined by GPFI (2020). For example, Digital Payments took on a value of 1, if an individual had responded that they made a payment using a debit card/mobile phone/internet/online for utility bill, bills, sending money to friends or for an instore purchase. Otherwise, it took on a value of 0. A value of 1 for any of the constructed variables for DFI would indicate whether the person had used different kinds of digital financial services, and a 0 would indicate whether they had not used such a service (that is they only depended on traditional financial services or on informal channels).

Informal Finance

Some authors have reported that individuals may use both formal and informal channels for accessing funds in times of need (Aliber, 2015; Li, 2024). Salignac et al., (2019, 2022) has emphasized the importance of social capital (friends and family) both in terms of being a source of funds as well as financial knowledge and skills. In this study, we include some variables related to informal payments and receipts, informal savings (through saving club etc.) and borrowing (through friends, family members, employer, money lender etc.) based on responses to related question[12]. For the analysis, these responses were coded as 0 and 1, for No, and Yes respectively.

Socioeconomic and Demographic Control Variables

It has been observed in several studies (Lusardi et al., 2011; Klapper et al., 2013; Salignac et al., 2019; Bialowolski et al., 2021) that the demographic characteristics of individuals influence their financial behavior, which could affect their financial outcomes. We included several socio-economic and demographic variables, viz. gender (male/female), age in years, education level, and income level as control variables. Education is measured at three levels: completion of primary school or below, completion of secondary school, and completion of tertiary education. Income level of individual refers to the within economy household income quintile of respondent. Since income is categorized in terms of quintiles, respondents are grouped into five different income categories.

---

[12] Made Informal Payments: In the PAST 12 MONTHS, have you paid money for (reason ..) in cash.
Received Informal Payments: In the PAST 12 MONTHS, have you received money from (source ..) in cash.
Informal savings: In the PAST 12 MONTHS, have you, personally, saved or set aside any money by Using an informal savings club (like [insert local example]), or a person outside the family?
Informal Borrowing: In the PAST 12 MONTHS, have you, by yourself or together with someone else, borrowed any money from family, relatives, or friends?

2.3.3 Descriptive Summary:

Table 2.1 provides the overall and country wise summary of all the dependent, independent (both explanatory and control), and the instrumental variables used in this study. Following observation were made:

Traditional Financial Inclusion: We observe an overall rise in formal financial inclusion across all countries from 2014 to 2021. However, some countries did notably better than others. Individuals from Brazil, China, Russia, South Africa, and Thailand have higher than average levels of traditional financial inclusion in terms of bank account ownership and usage of financial services such as savings, borrowing, payments and receipts. The countries that consistently demonstrate low levels of financial inclusion are Egypt, Mexico, Indonesia, Philippines, Colombia and India.

Digital Financial Inclusion: An increase in digital financial inclusion has also been noted for all countries from 2014 to 2021. Brazil, Argentina, China, Thailand, Russia and South Africa report higher than average levels of digital financial inclusion. The countries with the lowest levels of DFI are Indonesia, Egypt, India, Malaysia, Mexico and Colombia. Digital payment is the only aspect of DFI that is high and has improved significantly from 2014 to 2021. Temporally, percentage of individuals making digital payments has increased by 144% and percentage receiving digital money has increased by 447% across all countries. However, this is due to a sudden technological shift resulting in growth from almost no digital transactions in 2014 to moderate levels in 2021.

Informal Financial Activities: We observe an interesting pattern with respect to usage of informal financial channels. Informal financial activities are negatively correlated with the level of both traditional financial inclusion as well as digital financial inclusion. Countries with high levels of FI and DFI such as Brazil, China, Russia and Argentina

report low dependence on informal financial channels. Countries like Egypt, India, Colombia and Malaysia which have low levels of FI and DFI report high levels of usage of informal financial channels. Temporally, informal payments and receipts have decreased from 2014 to 2021. However, informal saving and borrowing continue to be an important channel for individuals in all countries in 2021.

Financial Resilience: We observed an increase in the self-reported levels of financial resilience for all the countries included in this study. The greatest increase in self-reported financial resilience is observed in Brazil, Egypt, South Africa and Colombia.

2.3.4 Statistical Model – Pooled Cross-sectional Data

As our dependent variable is a binary variable, we used probit regression model to estimate the following baseline probit regression model:

$$\boldsymbol{y_{ijk} = a_o + a_1 \alpha_{ijk} + a_{2j} \beta_{ijk} + \epsilon_{ijk}}$$

Here $\boldsymbol{y_{ijk}}$ **,** a binary dependent variable is an indicator of financial resilience for an individual "$\boldsymbol{i}$" from country "$\boldsymbol{j}$" in the year "$\boldsymbol{k}$"; whereas, $\boldsymbol{\alpha_{ijk}}$ is the vector of predictor variables i.e., the indicators of financial inclusion (account ownership, saving at and borrowing from formal financial institution, digital borrowing); $\boldsymbol{\beta_{ijk}}$ is the vector of control variables, which include demographic controls (age, gender, education level, income level) and the control variables pertaining to the informal financial behavior (informal savings, informal borrowing). Following Fungáčová (2015), we included both age, and age^2 (square of age) to take care of nonlinear influence of age on financial resilience. In subsequent models, year, and country fixed effects were also included.

Table 2.1: Descriptive summary

	All	All	ARG	ARG	BRZ	BRZ	CHN	CHN	COL	COL	EGY	EGY	IND	IND
	2014	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**
Observations	17432	16501	957	889	979	887	3713	3079	972	825	990	979	2565	2688
Financial Resilience	73.90	94.44	75.03	95.84	53.42	97.18	83.79	97.86	71.50	98.06	61.82	91.93	71.34	88.13
Indicators: Traditional Financial Inclusion (%)														
Traditional Account	60.95	77.33	55.80	77.95	69.97	89.97	76.92	95.16	37.76	60.36	19.49	32.58	56.50	79.69
Traditional Savings	24.75	31.32	5.02	18.11	11.75	35.51	40.40	55.08	11.42	18.91	5.25	4.90	17.06	14.17
Traditional Borrowing	10.99	15.31	9.51	12.49	12.16	20.07	6.73	21.24	15.74	18.55	6.67	5.21	7.32	9.78
Traditional Payments	16.30	24.30	8.25	37.80	12.46	51.18	23.57	27.28	5.97	19.64	1.31	0.20	7.05	7.48
Traditional Receipts	29.02	41.14	28.00	43.76	34.83	53.55	29.33	51.71	20.88	29.70	5.25	18.28	10.86	15.74
Indicators: Digital Financial Inclusion (%)														
Digital Borrowing	17.71	22.55	29.57	47.69	28.91	51.63	16.21	41.02	17.08	19.15	12.93	2.66	7.44	4.76
Digital Payments	24.48	59.85	29.68	71.88	41.06	78.02	24.86	96.30	17.90	47.15	7.58	8.99	11.57	22.47
Digital Receipts	2.05	11.21	0.00	5.85	0.20	18.83	1.37	0.00	0.93	10.79	0.10	0.72	1.52	3.87
Indicators: Informal Financial Activities (%)														
Informal Savings	8.91	9.01	1.46	5.51	2.96	6.88	2.88	5.78	4.53	8.36	12.22	10.93	10.16	9.08
Informal Borrowings	27.75	28.63	5.22	21.93	5.62	22.77	22.46	22.38	13.89	29.58	21.62	35.24	33.61	32.18
Informal Payments	72.63	28.03	75.65	33.86	73.65	20.97	80.77	3.22	77.37	36.61	73.84	62.41	52.10	22.47
Informal Receipts	45.53	19.68	27.69	18.34	21.96	13.98	55.05	3.48	33.44	23.52	24.95	37.49	38.63	19.31
Instrumental Variables														
Bank Branch Concentration (per 100000 adults)			13.17	13.08	20.46	17.94	7.81	8.77	15.72	13.44	4.34	6.37	11.74	14.57
GDP Growth Rate (in %)			2.41	-9.90	3.01	-3.28	7.77	2.24	5.13	-7.19	2.19	3.55	6.39	-5.78
Literacy Rate (in %)			99.12	99.00	91.73	94.3	96.36	97.15	94.19	95.64	72.44	74.5	72.23	76.32
Mobile Connectivity Index (on scale of 100)			52.99	66.1	58.18	69.12	60.71	76.66	57.47	66.01	47.24	56.93	40.59	59.66

(continued on next page)

Table 2.1: (continued)

	All	All	ARG	ARG	BRZ	BRZ	CHN	CHN	COL	COL	EGY	EGY	IND	IND
	2014	2021	2014	2021	2014	2021	2014	2021	2014	2021	2014	2021	2014	2021
Demographics variables (%)														
Male	44.68	49.42	40.44	55.57	40.25	53.89	45.60	51.51	36.73	47.15	51.31	51.89	54.05	53.91
Age (Median)	40.00	36.00	44.00	44.00	44.00	39.00	46.00	33.00	45.00	33.00	35.00	38.00	35.00	34.00
Education: Primary or less	42.05	23.05	36.99	12.37	51.07	12.97	66.12	17.47	31.69	13.94	36.46	37.28	60.94	52.90
Education: Secondary	45.56	51.54	59.25	64.00	45.25	55.13	26.74	45.92	54.53	67.03	49.19	50.26	31.93	36.53
Education: Tertiary	12.39	25.41	3.76	23.62	3.68	31.91	7.14	36.60	13.79	19.03	14.34	12.46	7.13	10.57
Income: 1st Quintile	16.45	14.74	14.42	10.46	17.77	10.15	19.04	12.15	17.59	13.21	14.55	15.73	13.43	18.38
Income: 2nd Quintile	18.78	16.42	15.67	15.64	18.69	14.21	20.47	16.69	18.83	13.70	17.88	14.71	19.67	18.27
Income: 3rd Quintile	19.70	19.14	18.60	15.30	19.92	14.32	18.07	21.01	18.52	18.42	18.69	19.61	22.35	19.75
Income: 4th Quintile	20.25	22.96	20.90	27.67	22.27	26.49	17.45	26.01	23.15	23.64	21.62	20.94	20.64	21.24
Income: 5th Quintile	24.83	26.73	30.41	30.93	21.35	34.84	24.97	24.13	21.91	31.03	27.27	29.01	23.91	22.36

(continued on next page)

Table 2.1: (continued)

	IDN	IDN	MLY	MLY	MEX	MEX	PHL	PHL	RUS	RUS	SAF	SAF	THA	THA
	2014	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**	**2014**	**2021**
Observations	886	969	933	901	813	864	987	928	1730	1755	932	860	975	877
Financial Resilience	76.98	96.80	78.35	90.57	75.77	93.17	64.24	99.57	85.95	98.92	66.63	83.39	63.90	96.01
Indicators: Traditional Financial Inclusion (%)														
Traditional Account	42.55	52.84	83.82	92.34	43.54	38.19	32.73	53.34	72.54	90.66	72.75	88.50	79.18	98.06
Traditional Savings	32.96	23.74	40.09	49.17	16.73	11.34	17.33	29.74	19.48	22.68	37.66	45.41	40.10	65.56
Traditional Borrowing	15.01	11.97	21.97	7.88	9.59	9.61	13.07	15.84	12.14	24.56	15.34	14.75	15.49	16.19
Traditional Payments	14.11	8.46	39.01	32.96	13.53	8.80	5.67	14.76	20.12	50.60	39.59	26.60	14.77	34.89
Traditional Receipts	20.77	16.51	53.38	62.49	30.26	15.74	15.50	26.51	52.37	69.52	60.52	57.96	28.31	75.60
Indicators: Digital Financial Inclusion (%)														
Digital Borrowing	8.01	2.06	30.33	7.55	23.74	9.03	18.03	12.72	21.79	28.77	29.51	15.33	5.95	39.11
Digital Payments	12.08	25.28	35.16	61.15	26.20	32.29	17.83	49.68	40.52	87.35	50.64	75.26	12.10	89.28
Digital Receipts	0.23	2.79	2.79	8.88	3.20	3.94	3.14	10.02	1.10	26.04	15.02	26.13	1.23	58.72
Indicators: Informal Financial Activities (%)														
Informal Savings	30.25	17.96	9.65	5.77	17.47	11.00	10.03	9.05	1.10	1.71	30.69	28.57	7.69	11.06
Informal Borrowings	41.87	29.72	41.59	15.54	24.85	20.02	48.02	41.70	17.80	29.29	70.92	49.25	29.23	29.42
Informal Payments	77.54	65.63	72.45	28.75	67.40	40.86	73.05	50.86	73.93	20.51	62.98	25.32	92.41	25.66
Informal Receipts	59.37	43.96	46.73	14.87	36.29	19.56	64.34	44.29	39.25	18.23	61.70	18.58	72.10	17.56
Instrumental Variables														
Bank Branch Concentration (per 100000 adults)	17.36	15.27	10.72	8.73	14.83	12.79	8.24	9.17	38.52	24.59	10.07	9.29	12.09	10.59
GDP Growth Rate (in %)	5.56	-2.07	4.69	-5.46	0.852	-8.62	6.75	-9.52	1.76	-2.65	2.48	-5.96	2.69	-6.05
Literacy Rate (in %)	95.12	95.99	93.12	94.97	93.96	95.25	96.40	98.47	99.72	99.93	94.14	90.00	93.70	94.1
Mobile Connectivity Index (on scale of 100)	42.33	63.5	58.33	72.28	52.61	70.84	65.3	63.84	65.3	78.64	54.81	64.26	58.31	74.45

(continued on next page)

Table 2.1: (continued)

	IDN 2014	IDN 2021	MLY 2014	MLY 2021	MEX 2014	MEX 2021	PHL 2014	PHL 2021	RUS 2014	RUS 2021	SAF 2014	SAF 2021	THA 2014	THA 2021
Demographics variables (%)														
Male	46.61	43.76	57.88	46.73	45.76	39.47	42.55	43.00	32.54	48.77	44.42	43.09	35.18	50.06
Age (Median)	38.00	38.00	34.00	41.00	39.00	38.00	39.00	31.00	42.50	40.00	34.00	34.00	46.00	38.00
Education: Primary or less	32.62	28.28	14.04	16.98	26.81	28.01	30.70	14.55	8.79	3.65	22.21	9.99	50.26	21.09
Education: Secondary	62.75	67.29	53.91	64.59	59.41	61.92	55.52	57.11	56.76	47.29	65.99	75.03	42.67	26.34
Education: Tertiary	4.63	4.44	32.05	18.42	13.78	10.07	13.78	28.34	34.45	49.06	11.80	14.98	7.08	52.57
Income: 1st Quintile	16.59	15.69	19.29	18.09	15.87	18.87	16.21	13.79	14.86	15.33	15.88	17.19	17.13	10.83
Income: 2nd Quintile	18.17	17.44	17.47	16.87	16.48	19.10	19.45	14.44	16.71	18.46	18.99	15.45	20.41	12.20
Income: 3rd Quintile	25.40	19.40	20.15	20.53	18.82	19.79	19.45	20.69	19.48	18.86	17.38	17.65	19.90	17.67
Income: 4th Quintile	17.27	20.64	18.86	20.42	21.28	20.49	20.47	19.61	23.01	21.65	20.82	18.70	20.51	28.73
Income: 5th Quintile	22.57	26.83	24.22	24.08	27.55	21.76	24.42	31.47	25.95	25.70	26.93	31.01	22.05	30.56

Abbreviations: ARG: Argentina; **BRZ**: Brazil; **CHN:** China; **COL:** Colombia; **EGY:** Egypt; **IND:** India; **IDN:** Indonesia; **MSY:** Malaysia; **MEX:** Mexico; **PHL:** Philippines; **RUS:** Russia; **SAF:** South Africa; **THA:** Thailand

Following variables were scaled for the analysis purpose: Age, Bank Branch Concentration, GDP Growth Rate, Literacy Rate, Mobile Connectivity Index

2.3.5 Instrumental Variables to Address Endogeneity

Financial inclusion indicators are likely to be endogenous to financial resilience for the following reasons: First, there could be reverse causality between financial resilience and financial inclusion indicators. Second, owing to some unobserved characteristics, error terms could be correlated with the financial inclusion. To address endogeneity related concerns, we employed instrumental variables approach by using a recursive two-stage "bivariate probit model" (binary endogenous explanatory variable, and binary outcome/dependent variable) (Abadie, 2003; Marra and Radice, 2011), using "endogeneity" package in R software. Statistically, a valid instrumental variable needs to meet the following criteria (Stock and Watson, 2012):

i. Instrument relevance: $corr(Z_i, X_i) \neq 0$

ii. Instrument exogeneity: $corr(Z_i, u_i) = 0$

The test for instrument relevance criteria was based the 1st stage F statistics as recommended by Stock and Yogo (2005) and Lee et al., (2022). The results of these tests have been discussed in Section 4.3.

It is difficult to test the exclusion restriction statistically and should be justified based on economic rationale (Angrist & Pischke, 2009). For each of the endogenous independent variables related to FI or DFI, the instrumental variable chosen is a supply side variable that facilitates financial inclusion or digital financial inclusion at the country level. For instance, the financial infrastructure (physical location and concentration of bank branches) will impact average levels of financial inclusion while the digital infrastructure will impact average levels of digital financial inclusion. Thus, they would impact the independent variables, i.e. FI or DFI indicators, but would not affect the financial resilience of an individual household. That is, within the same country, there will be some

households that are more resilient and some that will be less resilient. Thus, these supply-side instrumental variables will not directly affect the dependent variable, i.e. financial resilience.

i. For the independent variable “having a bank account”, the number of branches per capita is used as an instrument variable. Bank branches per capita is an important supply-side factor that impacts financial inclusion (Backman, 2015). However, bank branches per capita while improving financial inclusion through greater access, will not impact the financial resilience of an individual household.

ii. For the independent variable “savings in a bank”, we have selected GDP growth as an instrument following Odhiambo (2008). While GDP growth rate indicates an increase in the overall economic situation within the country and hence may have some impact on household savings, it does not directly impact the financial resilience of an individual.

iii. Literacy rate is used as an instrument for financial payments. Financial literacy is necessary for effective use of financial services (Leyshon, 1998). While average literacy rates may reflect higher levels of financial literacy, it will not directly impact financial resilience of individual households.

iv. Shaikh (2023) and Aziz and Naima (2021) highlight the critical role of digital infrastructure to achieve successful delivery of digital financial services. Following this, we selected GSMA's mobile connectivity index as an instrumental variable for digital payments. The mobile connectivity index is a composite index comprising of four key enablers mobile internet adoption, viz. infrastructure, affordability, consumer

readiness, content and services[13]. Higher levels of mobile connectivity may increase the ability of an individual to have digital financial inclusion but will have little impact on financial resilience.

v. Internet connectivity is used as an instrumental variable for digital borrowing. Data on internet access is derived from the World Development Indicators[14]. Internet access promotes credit card usage by providing swift and convenient access to online retailers (Basnet and Donou-Adonsou, 2018). However, internet connectivity will not directly impact financial resilience of individual households.

[13] **Source:** https://www.mobileconnectivityindex.com/index.html
[14] **Source:** https://databank.worldbank.org/metadataglossary/world-development-indicators/series/IT.NET.USER.ZS

2.4 Results

2.4.1 Results of Regression Analysis

We look at the relative impact of traditional and digital financial inclusion on financial resilience. Financial resilience is measured using responses that indicate an individual's perception of their own ability to withstand shocks. Traditional financial inclusion is measured through five indicators: having a bank account, saving money or borrowing money from banks or other formal financial institutions, and transactions through a bank account (payments and receipts) in the last year. Digital financial inclusion measures include the use of credit or debit cards and the use of mobile accounts for digital transactions (payments and receipts). We include several control variables related to socio-economic and demographic characteristics of the individuals. We use country as well as year fixed effects to avoid omitted variable bias (Möhring, 2012). To account for endogeneity, we use five instrumental variables for each of the five indicators of FI and DFI that turned out to be the significant ones.

Table 2.2[15] summarizes the results from probit model. We started our analysis by regressing control variables first (Model 2a, pseudo R^2: 26880). We then added indicators of formal financial inclusion (Model 2b, pseudo R^2: 25628), and digital financial (Model 2c, pseudo R^2: 25335) inclusion in a stepwise manner. Model-2c, our baseline probit model, provided pooled estimates for our all our independent and control variables. Model-2d (pseudo R^2: 23595) added year fixed effects to Model 1, and Model-2e (pseudo

[15] Owing to the severe multicollinearity, variable, Digital Borrowing (use of credit card or borrowed through credit card) was dropped from the analysis. For this reason, variable “Credit Cards” denoting ownership of credit cards, will act as a proxy for the credit card usage i.e., digital borrowing.

R^2: 22694) added country fixed effects to Model-2. Following discussion is based on the results of the Model-2e.

Results of probit regression analysis suggest that all the indicators of formal or digital financial inclusion considered in our study have a significant positive influence on an individual's assessment of their financial resilience. We discuss below the relative importance of each of these modes of financial inclusion for self-reported financial resilience. We enumerate the financial inclusion indicators in the order of their relative importance.

Digital Payments: Digital Transactions-Payments (β = 0.207) had a statistically significant influence on self-reported financial resilience. Since sending money (to family, or friends; bill payment) has no direct connection with the financial resilience (i.e., ability to cope up with financial shock), this could be due to the reverse causality, or it could be an indicator of individual's higher financial capability or control, which is likely to have a positive influence on individual's assessment of their financial resilience. Similar effects of digital payments on financial resilience have been noted by Demirgüç-Kunt et al., (2022), Wu et al., (2023) and Naveenan et al., (2024).

Digital Borrowing: This variable has a statistically significant but small positive effect on financial resilience (β = 0.093). Access to digital borrowing improves an individual's assessment of their financial resilience, as it permits them quick access to short-term loans without the need to get such loans approved through an external agency (Arellano et al., 2019).

FI - Personal Savings: Having personal savings in a formal financial institution (β = 0.560) is the most important factor in influencing individual's assessment of their ability to deal with financial shock, as the same is readily accessible without a dependency on

anyone. The effect size of this variable is the largest among all FI indicators. The ability to save in a savings or a fixed deposit account leads to consumption smoothing, and provides a buffer against income shocks (Salignac et al., 2019; Berlofa and Modena, 2013; and Do, 2023).

Having a bank account: Having an account at formal financial institutions is the second most important determinant (β = 0.239) of individual's assessment of their financial resilience as it is a necessary prerequisite to facilitate formal savings, and borrowing (either formal borrowing through bank or digital borrowing through credit card). The importance of having a bank account for financial resilience is noted by several authors including Belayeth Hussain et al., (2018), Arellano et al., (2019) and Pomeroy et al., (2020).

Payments through Banks: Having access to formal payment systems through financial institutions had a small but statistically positive impact on financial resilience (β = 0.200). Access to formal payments has been found to improve financial resilience (Peachey and Roe, 2004 and Belayeth Hussain et al., 2018).

Informal Payments and Informal Receipts: Receipts of cash and payment of cash to friends and family members were found to have a small but statistically significant but small effect on financial resilience of individuals (β = 0.133; β = 0.118). This indicates the social capital of the individual which is one of the pillars of financial resilience (Salignac et al., 2019)

Informal Savings: Informal savings had a small positive impact on financial resilience (β = 0.113). Informal savings has been found to have a positive impact on financial resilience by Tinta et al., (2022) and McKnight and Rucci (2020).

Country Fixed Effects in Financial Resilience: Inclusion of country-fixed effects revealed that for a given level of financial inclusion, individuals from different countries exhibited varied confidence in their ability to deal with financial shock, which is indicative of the role of various country-level factors (culture, governance, policy, institutions, etc.) in determining individual's level of financial resilience. Compared to Argentina (which is the base country), individuals from Russia ($\beta = 0.227$) and China ($\beta = 0.214$) exhibited greater confidence in their ability to cope up with financial shock. While no significant difference in resilience level in comparison to Argentina was observed for the Indonesia, Colombia, and Mexico; slightly lower level of resilience was observed for Philippines ($\beta = -0.179$), India ($\beta = -0.198$) and Egypt ($\beta = -0.242$). Considerably lower levels of resilience were observed for individuals from Malaysia ($\beta = -0.404$, $p < 0.001$); Brazil ($\beta = -0.518$, $p < 0.001$), Thailand ($\beta = -0.551$, $p < 0.001$), and South Africa ($\beta = -0.825$, $p < 0.001$).

Brazil, Thailand and South Africa report high levels of FI and DFI and yet individuals from these countries report lower levels of financial resilience. Low levels of financial resilience within Brazilian households have also been reported by Arellano et al., (2019). Ratnawati (2020) points out that FI has not been effective in reducing poverty or income inequality within ten Asian countries, providing empirical evidence similar to our results for Thailand that has high levels of FI and DFI, but low levels of FR. In the case of South Africa, our results are supported by Kass-Hanna et al., (2020); Tinta et al., (2022) and Zeka and Alhassan (2024). Each of these studies indicate that financial literacy is necessary for individuals to be able to benefit from financial inclusion and digital financial inclusion measures. The specific governmental policies that might have resulted in country level differences in financial inclusion have been discussed further in Section 2.4.4.

Year-fixed Effect: The inclusion of year-fixed effects revealed that compared to the year 2014, individuals in general are more confident ($\beta = 0.947$) in their ability to deal with economic shocks in the year 2021.

Socio-economic and Demographic Control Variables: We included several socio-economic and demographic variables, as control variables. The effect sizes of the statistically significant variables are discussed below:

Income: The coefficients for income quantiles were the highest among all control variables. Those in the 5^{th} and 4^{th} quintiles of income reported greatest levels of financial resilience. The positive impact of income on financial resilience has been reported by Hamid et al., (2023) and Tinta et al., (2022).

Education: Individuals with tertiary education or higher reported greater levels of financial resilience than those with secondary or primary education. Similar results are reported by Tinta et al., (2022) and Hamid et al., (2023).

Gender: Men were more financially resilient than women though the effect size is small. Similar effects have been observed by Zeka and Al Hassan (2024) and Tinta et al., (2022).

Age: The coefficient for age was negative indicating that older individuals reported lower levels of financial resilience. The negative coefficient associate with the age-squared term confirms the non-linear relation, indicating that the decrease in financial resilience with a unit increases with age was larger for older individuals compared to younger individuals. Our results are similar to those obtained by Tinta et al., (2022).

Table 2.2: Financial Resilience (pooled panel probit model)

	Model 2a			Model 2b			Model 2c			Model 2d			Model 2e		
	β	SE		β	SE		β	SE		β	SE		β	SE	
DFI Indicator															
Digital Borrowing							-0.041	0.030		0.106	0.031	***	0.093	0.033	**
Digital Payments							0.433	0.027	***	0.222	0.028	***	0.207	0.029	***
Digital Receipts							0.094	0.053	.	-0.119	0.056	*	0.064	0.059	
FI Indicator															
Traditional Account				0.358	0.022	***	0.271	0.022	***	0.209	0.023	***	0.239	0.025	***
Traditional Savings				0.516	0.028	***	0.486	0.028	***	0.545	0.029	***	0.560	0.031	***
Traditional Borrowing				0.109	0.031	***	0.072	0.032	*	0.040	0.033		0.036	0.034	
Traditional Payments				0.210	0.031	***	0.119	0.032	***	0.207	0.034	***	0.200	0.035	***
Traditional Receipts				-0.045	0.025	.	-0.111	0.025	***	-0.075	0.026	**	-0.047	0.027	.
Informal Finance															
Informal Savings	0.123	0.033	***	0.004	0.034		-0.003	0.035		-0.010	0.036		0.113	0.038	**
Informal Borrowing	0.026	0.020		-0.004	0.020		-0.010	0.021		-0.055	0.021	**	0.017	0.023	
Informal Payments	-0.139	0.019	***	-0.129	0.019	***	-0.086	0.019	***	0.160	0.021	***	0.133	0.022	***
Informal Receipts	-0.035	0.019	.	-0.024	0.020		0.005	0.020		0.119	0.020	***	0.118	0.021	***
Demographic Control Variables															
Gender	0.137	0.018	***	0.110	0.018	***	0.105	0.018	***	0.089	0.019	***	0.093	0.019	***
Age	0.004	0.010		-0.031	0.010	**	-0.020	0.010	*	-0.038	0.011	***	-0.063	0.011	***
Age2	-0.092	0.007	***	-0.066	0.007	***	-0.063	0.007	***	-0.039	0.008	***	-0.038	0.008	***
Education - Secondary	0.390	0.019	***	0.329	0.020	***	0.283	0.020	***	0.224	0.021	***	0.242	0.023	***
Education - Tertiary	0.920	0.034	***	0.701	0.036	***	0.598	0.037	***	0.525	0.038	***	0.467	0.041	***
Socioeconomic Control Variables															
Income Quintile 2	0.180	0.026	***	0.159	0.027	***	0.156	0.027	***	0.190	0.028	***	0.201	0.028	***
Income Quintile 3	0.369	0.027	***	0.331	0.027	***	0.321	0.027	***	0.364	0.028	***	0.382	0.029	***
Income Quintile 4	0.550	0.028	***	0.482	0.028	***	0.465	0.028	***	0.521	0.030	***	0.549	0.030	***
Income Quintile 5	0.680	0.029	***	0.555	0.030	***	0.532	0.030	***	0.623	0.031	***	0.649	0.032	***

(continued on next page)

Table 2.2: (continued)

	Model 2a			Model 2b			Model 2c			Model 2d			Model 2e		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Year Fixed Effects															
Year2021										0.921	0.023	***	0.947	0.024	***
Country Fixed Effects															
Russia													0.227	0.056	***
China													0.214	0.049	***
Colombia													0.055	0.058	
Indonesia													0.045	0.060	
Mexico													0.016	0.059	
Philippines													-0.179	0.057	**
India													-0.198	0.049	***
Egypt													-0.242	0.054	***
Malaysia													-0.404	0.059	***
Brazil													-0.518	0.055	***
Thailand													-0.551	0.058	***
South Africa													-0.825	0.058	***
(Intercept)	0.445	0.026	***	0.208	0.028	***	0.188	0.029	***	-0.270	0.032	***	-0.195	0.052	***
AIC:	26880			25628			25335			23595			22694		
Observations	33933			33933			33933			33933			33933		

This table reports the results of a binary probit model for the impact of the indicators of financial inclusion on financial resilience.
Education: "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **Year:** 2014 was used as a base year for year; **Country:** Argentina was used as a base country for countries. **Significance level: .** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

2.4.2 Robustness Checks for Possible Bias and Endogeneity in Models

Omitted Variable Bias: In order to avoid omitted variable bias in the econometric model, we have included several control variables related to financial inclusion, access to informal finance, socio-economic and demographic variables as well as year and country fixed effects. The interpretation of the impact of these control variables on financial resilience have been discussed in detail above.

Endogeneity Issues: As discussed in the methodology section, we adopted an instrumental variable approach to take care of the endogeneity-related concerns. We have employed the bi-probit IV approach since our dependent and endogenous independent variables are binary in nature (Abadie, 2003).

i. Each instrumental variable has a statistically significant correlation with the included independent variable, and hence the criteria of instrument relevance is satisfied. The test of instrument relevance was reported in the Table 2.3 (estimates of stage 1).

ii. Stock and Yogo (2005) recommended the use of 1st stage F-statistic in 2SLS estimation to identify whether a given instrumental variable is a weak instrument. In their study, for a just identified model with one endogenous and one instrumental variable, the recommended threshold for 1st stage F statistic was 16.38. In all our models, the 1st-stage F statistic was well above the prescribed critical values of 16.38 (see Table 2.3). In a more recent paper, Lee et al. (2022) suggested a higher threshold for the F-statistic 104.7. We note from Table 2.3, that except for model 3a, the 1st stage F-statistic in models 3b, 3c, 3d and 3e are more than this value. In model 3a, the estimated F statistic is 29.5. Hence, we use a multiplication factor of 1.2 to derive the corrected standard errors as per Lee et

al., (2022). The estimated coefficients remain statistically significant after using the multiplying factor. Thus, the instrumental variables used in our models meet the statistical criteria of being strong instruments.

Having a formal bank account: Model 3a shows results of the bi-probit model for the effect of bank account ownership on the individual's financial resilience. The instrumental variable for bank accounts was the branch concentration per 100000. The effect size increased by roughly 1.6 times, from around 0.209 in Model 2d to around 0.334 in Model 3a.

Formal Savings: Model 3b shows results of the bi-probit model for the effect of formal savings ownership on self-reported financial resilience. The instrumental variable for formal savings was the GDP growth rate for the country. The effect size increased by roughly 2.2 times, from 0.545 in Model 2d to around 1.209 in Model 3b.

Formal Payments: Model 3c shows results of the bi-probit model for the effect of formal payments (using a debit card) on the individual's financial resilience. The instrumental variable for formal payments was the literacy rate. The effect size increased by roughly 3 times, from around 0.207 in Model 2d to around 0.628 in Model 3c.

Digital Borrowing: Model 3d shows results of the bi-probit model for the effect of having a credit card on financial resilience. The instrumental variable for credit card was the internet connectivity. The effect size increased by around 4 times, from around 0.106 in Model 2d to around 0.434 in Model 3d.

Digital Transactions – Payments: Model 3e shows results of the bi-probit model for the effect of making digital payments on financial resilience. The instrumental variable for

digital payments was the mobile connectivity index. The effect size increased by around 1.9 times, from 0.222 in Model 2d to around 0.415 in Model 3e.

Using instrumental variables to address endogeneity issues, we find that four dimensions of financial inclusion, viz. having a bank account, having formal savings, using a credit card and making digital payments are all causally related to the increase in self-reported financial resilience of an individual. Of these the first two, that is having a bank account and having savings are related to traditional financial inclusion while the latter two, viz. having credit card and making digital payments are related to digital financial inclusion.

Table 2.3: Financial Resilience (biprobit model – inclusion of instrumental variables to control for endogeneity)

Endogenous Variable	Model 3a Traditional Account			Model 3b Traditional Savings			Model 3c Traditional Payments			Model 3d Digital Borrowing			Model 3e Digital Payments		
	β	SE		β	SE		β	SE		β	SE		β	SE	
Stage-1															
Branch Concentration	0.032	0.011	**												
GDP Growth Rate				0.323	0.014	***									
Literacy Rate							0.194	0.013	***						
Internet										0.202	0.014	***			
Mobile Connectivity Index													0.54	0.014	***
Stage-2															
Digital Borrowing	0.102	0.031	**	0.093	0.031	**	0.069	0.033	*	0.45	0.143	**	0.056	0.036	
Digital Payments	0.194	0.031	***	0.137	0.032	***	0.156	0.035	***	0.138	0.046	**	0.415	0.071	***
Digital Receipts	-0.106	0.056	.	-0.153	0.054	**	-0.168	0.057	**	-0.113	0.056	*	-0.163	0.058	**
Traditional Account	0.334	0.067	***	0.036	0.041		0.169	0.027	***	0.204	0.023	***	0.174	0.026	***
Traditional Savings	0.514	0.033	***	1.209	0.108	***	0.504	0.032	***	0.535	0.029	***	0.528	0.03	***
Traditional Borrowing	0.032	0.034		0.021	0.033		0.023	0.034		-0.014	0.04		0.032	0.033	
Traditional Payments	0.19	0.034	***	0.115	0.037	**	0.628	0.125	***	0.172	0.037	***	0.174	0.035	***
Traditional Receipts	-0.124	0.036	***	-0.109	0.026	***	-0.116	0.029	***	-0.088	0.027	***	-0.096	0.027	***
Informal Savings	-0.005	0.036		-0.102	0.038	**	-0.021	0.036		-0.012	0.036		-0.008	0.036	
Informal Borrowing	-0.053	0.021	*	-0.04	0.021	.	-0.062	0.021	**	-0.055	0.021	**	-0.055	0.021	**
Informal Transactions: Payments	0.157	0.021	***	0.14	0.021	***	0.191	0.023	***	0.165	0.021	***	0.168	0.021	***
Informal Transactions: Receipts	0.122	0.02	***	0.094	0.021	***	0.112	0.02	***	0.127	0.021	***	0.126	0.021	***

Continued on next page ..

Table 2.3: (continued)

Endogenous Variable	Model 3a Traditional Account			Model 3b Traditional Savings			Model 3c Traditional Payments			Model 3d Digital Borrowing			Model 3e Digital Payments		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Gender	0.086	0.019	***	0.079	0.019	***	0.086	0.019	***	0.084	0.019	***	0.088	0.019	***
Age	-0.042	0.011	***	-0.035	0.01	***	-0.049	0.011	***	-0.046	0.011	***	-0.032	0.011	**
Age-squared	-0.037	0.008	***	-0.033	0.008	***	-0.034	0.008	***	-0.032	0.008	***	-0.038	0.008	***
Education: Secondary	0.227	0.021	***	0.224	0.021	***	0.204	0.022	***	0.207	0.022	***	0.205	0.022	***
Education: Tertiary	0.526	0.038	***	0.477	0.039	***	0.475	0.042	***	0.483	0.043	***	0.485	0.041	***
Income Quintile: 2	0.188	0.028	***	0.167	0.028	***	0.189	0.028	***	0.182	0.028	***	0.189	0.028	***
Income Quintile: 3	0.363	0.028	***	0.316	0.03	***	0.36	0.028	***	0.359	0.028	***	0.358	0.028	***
Income Quintile: 4	0.518	0.03	***	0.452	0.033	***	0.512	0.03	***	0.508	0.03	***	0.511	0.03	***
Income Quintile: 5	0.617	0.031	***	0.513	0.038	***	0.602	0.032	***	0.596	0.034	***	0.608	0.032	***
Year: 2021	0.911	0.024	***	0.907	0.024	***	0.938	0.023	***	0.941	0.024	***	0.886	0.026	***
(Intercept)	-0.314	0.039	***	-0.221	0.034	***	-0.272	0.031	***	-0.281	0.032	***	-0.262	0.032	***
Observations	33933			33933			33933			33933			33933		
Wald Test of Exogeneity (*Correlation* $\rho = 0$)	3.866	*		27.201	***		10.954	***		5.876	*		8.298	**	
Test for Weak Instruments (*1st Stage F-Statistics*)	29.5			498.9			172.3			166.8			1852.8		

Education: "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **Year:** 2014 was used as a base year; **Country:** Argentina was used as a base country; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

2.4.3 Discussion of Results in the Context of Country Level Differences

Our results provide several new insights. First, we see that there has been an increase in perception of financial resilience from 2014 to 2021 across all countries. Having savings in the bank account has the highest impact on FR, followed by having an account, credit card and making digital payments. The inclusion of instrumental variables to take care of endogeneity results yields bigger effect sizes, indicating causal links. Our results are similar to other studies viz. Bharadwaj et al. (2019), Mfossa (2019), Sakyi-Nyarko et al. (2022), Dluhopolskyi et al., (2023) and Nandru et al., (2024). Country fixed effects indicate higher levels of financial resilience in Russia and China. Respondents from Brazil, Thailand and South Africa report very low levels of financial resilience. We now briefly discuss country specific policies related to financial inclusion, to provide context for our results.

Kabakova and Plaksenkov (2018) identify four dimensions of an ecosystem that enables greater financial inclusion in a country viz. socio-demographic, economic, technological and political factors. In response to economic sanctions imposed in 2014, Russia implemented the Mir national payment system to reduce its dependence on the dollar (Gricius, 2020), which gave an impetus to digital financial inclusion. The Chinese government took several steps to improve financial inclusion in rural areas including (i) development of rural credit cooperatives, establishment of an agency service network, and (iii) setting up of characteristic bank branches (Su et al., 2019). Financial inclusion had a positive impact on household income Zhang and Posso (2019). FI also improved credit usage (Chen and Jin, 2017), consumption smoothing (Lai et al., 2020) and wealth accumulation among poor households in China.

The countries from Latin America included in this study are Brazil, Colombia and Mexico. In Brazil, the correspondent model was responsible for delivering financial services to unbanked Brazilians using the Bolsa Familia social welfare program (Sugiyama and Hunter, 2020). However, higher financial inclusion has led to higher levels of income inequality (Fonseca and Matray, 2024); and to over-indebtedness of low-income population, social exclusion practices and reinforcement of power asymmetries (Diniz et al., 2012). In Colombia, financial inclusion policies have improved access but not usage (Karpowicz, 2016). The implementation of "Progresa-Oportunidades-Prospera" programme in Mexico allowed individuals to switch from cash payments to online payments, which increased formal savings and remittances, improving coping mechanisms of poor households (Masino and Niño-Zarazúa, 2018).

From Africa we have included South Africa and Egypt. In South Africa, despite a well-developed financial system, systemic inequalities have led to financial exclusion of individuals who were poor, less educated and lived in rural areas in Eastern Cape, Free State and Limpopo provinces (Mahalika et al., 2023). In Egypt, the National Council for Payments NCP in 2016 introduced policies such as (i) reducing use of banknotes, (ii) motivating electronic payments; and (iii) modernizing national payment systems (Rashdan and Eissa, 2020). However, the availability of banking services remained low, and only 38% of Egyptians had a bank account (Tinta et al., 2022).

Among south-east Asian countries, Malaysia and Thailand report higher levels of financial inclusion (Morgan and Yoshino, 2017; Mojica and Mapa, 2017). In Thailand, the utilization of financial services is around 88% with access to transaction services is highest (75%), followed by insurance products (59%), most of which are provided by the government. However, Philippines has witnessed low levels of financial inclusion with

high barriers on the demand side as well as supply side. A high percentage of localities remaining unbanked (Mojica and Mapa, 2017), and there is a greater reliance on microfinance for meeting financial needs (Morgan and Yoshino, 2017). Dawood et al., (2019) report that financial inclusion led to reduction of household poverty in Indonesia.

Finally, in India, financial inclusion has remained low despite the existence of a large and well-regulated financial system (Morgan and Yoshino, 2017). The Indian government launched the National Rural Employment Guarantee Scheme between 2006 and 2011, and the Pradhan Mantri Jan Dhan Yojana in 2014, both geared towards improving financial inclusion. However financial inclusion has remained low due to low earnings, gender and social discrimination, low levels of financial literacy, remote locations and cultural barriers (Goel, 2023). Access to bank accounts, in itself, did not have a significant impact on poverty (Sen and De, 2018).

As seen from the country-specific studies mentioned above, various differences exist across the countries studied in this paper. These differences are observed in summary statistics and are controlled for using country fixed effects in our models. The magnitudes of country fixed effects reflect similar trends in the extant literature.

2.5 Conclusion

In the backdrop of multiple economic shocks faced by countries across the world, it is important to understand the factors that make individuals financially resilient in emerging markets that represent around 50% of the global population and around 30% of the global GDP. We use data from a subsample of 13 countries comprising of Argentina, Brazil, China, Colombia, Egypt, India, Indonesia, Malysia, Mexico, Philippines, Russia, South Africa and Thailand from the Global Findex database. Argentina, Brazil, China, Russia and Thailand reported high levels of traditional financial inclusion as well as digital

financial inclusion while Colombia, Egypt, India, Indonesia, Mexico and Philippines report low levels of the same.

Pooled probit regression models were built with year and country fixed effects to gauge the relative impact of financial inclusion and digital financial inclusion indicators on financial resilience. Among financial inclusion indicators, savings, having an account and making traditional payments positively impacted financial resilience. Digital payments and digital borrowing were found to have statistically significant and positive impacts on financial resilience. Socio-economic and demographic variables such as age, gender, education levels and income levels impacted financial resilience, with our results matching those of other studies. The inclusion of appropriate instrumental variables for each of the main variable of interest removed endogeneity and resulted in larger effect sizes which provided empirical support for the presence of causality. In terms of effect sizes, the four most important variables that improved financial resilience were income, education, savings and payments.

We conclude that the primary factor that improves the financial resilience of individuals in emerging countries is having economic resources in the form of income and savings that can be used in the event of sudden emergencies. The ability to make digital payments (which may be a proxy for financial efficacy) and the availability of short-term credit through credit cards (digital borrowing) are also important factors that improve the resilience of individuals in the event of a shock. It is expected that digital financial inclusion will improve financial inclusion by bringing into the fold the unbanked and underbanked population; however, over-reliance on digital technology to promote financial inclusion may create barriers for those who lack digital literacy and the skills to navigate through the spectrum of digital financial services, which may make them

susceptible to scam, phishing, and over-indebtedness. These shortcomings associated with the delivery of digital financial inclusion highlight the significance of digital and financial literacy.

2.5.1 Limitations and Policy Implications:

One of the limitations of this study is that we have not considered cultural mores in the way individuals may perceive their financial resilience. Bias in self-assessment, due to high levels of pessimism and low confidence in public institutions may lead to lower reported perceptions of financial resilience. We did not have access to true panel data in terms of the same individuals being surveyed year over year, thus we could not address life-stage issues for resilience. We were unable to include any information related to the financial literacy or attitude, which influence individual's financial decision making as the same was not measured in the Global Findex Survey. There was a lack of information pertaining to the employment status of individuals as well as their location (rural or urban) within the economy. Availability of data related to these omitted factors including cultural factors may address such limitations in future studies.

The policy implications of our findings are as follows. Though several countries have implemented policies geared towards improving access to financial and digital financial services, the actual usage of these services, and their impact on financial resilience differ. Other than having an account, having savings and the ability to make payments, using traditional or digital payments, have significant impact on an individual's resilience. Establishment of appropriate financial and digital infrastructure and improving digital and financial literacy will improve financial inclusion. The presence of a robust regulatory mechanism to protect against fraud risk is necessary for building consumer trust and improving economic outcomes. Economic growth, opportunities for economic

participation for all sections of society and financial inclusion will together promote individual financial resilience in emerging countries. Government policy needs to consider financial inclusion and digital financial inclusion as an important facilitating mechanism for improving economic outcomes, but in the absence of interventions aimed towards the improvement of socio-economic conditions for vulnerable sections of society, this may not be enough to build individual resilience to shocks.

Chapter 3:

Financial Resilience and Financial Worry of Households – Role of National Culture: A Cross-Country Analysis

3.1 Introduction

It is not uncommon for households[16] to encounter or anticipate a phase of economic hardship. Various factors contributing to such challenges include unemployment, loss of earnings, medical expenses, theft, accidents, and natural disasters, among others. These causes of economic hardship can generally be classified as idiosyncratic shocks, when they affect specific individual or household, and covariate shocks, when they impact broader populations (Pradhan and Mukherjee, 2018). The frequent occurrence of either of these scenarios of economic hardships is not a rare phenomenon these days and can increase the vulnerability of the wider community to financial setbacks, resulting in diminished financial resilience and amplifying feelings of financial distress and anxiety.

Financial resilience and financial worry are the two key aspects of consumer financial well-being (CFPB, 2015) that have gained considerable attention in academia and from policymakers. While the financial resilience of an individual or consumer can be described as their ability to recover from income shock (Salignac et al., 2019; McKnight & Rucci, 2020), financial worry can be described as "repeated and negative thinking about the uncertainty of one's (future) financial situation" (De Bruijn & Antonides, 2020). The concept of financial resilience and financial worry has several societal-level implications, such as health and educational outcomes, family stability, and dependence

[16] The terms "household," and "consumer," in our study broadly refer to individuals, families, or both, and in some instances, these terms have been used interchangeably.

on or burdening state resources (Mitra et al., 2016; Gudmunson et al., 2007; Khandekar, 2007). Recent surveys (Demirgüç-Kunt et al., 2022) indicate that a substantial portion of the global population lacks confidence in their ability to deal with financial shocks and is worried about their key financial requirements. Additionally, these numbers suggest considerable differences across countries, regardless of whether the country is being developed or developing, indicating the influence of country-level factors on an individual's subjective assessment of their financial resilience and financial worry. In addition to the economic and policy-specific factors, another country-level factor that is likely to influence an individual's subjective assessment of their financial wellbeing is the national culture (Kwok & Tadesse, 2006).

National culture can be understood as a set of beliefs and values shared by the members of a society, which remains largely stable over time and ultimately manifests itself in the behavior and decisions of the members of the society. Efforts to understand the role of culture on economic outcomes are not new (Guiso et al., 2006); however, in recent times, efforts have been focused on the exploration of the cultural influence in shaping an individual's economic behavior. Multiple pieces of evidence from extant literature suggest the association between national culture and the financial behavior of individuals, which might influence their assessment of financial resilience and financial worries. These shreds of evidence include findings such as the association of national culture with financial literacy, financial capability, and choices related to savings, investments, and borrowings, to name a few (Ahunov & Van Hove, 2020; Bialowolski et al., 2023; Kwok & Tadesse, 2006; Peterson et al., 2015).

Though the extant literature suggests that national culture could be associated with an individual's financial resilience and financial worry, there is a dearth of empirical studies

exploring the same. Thus, for the current study, we attempt to explore the empirical association of national culture with the financial resilience and financial worry of individuals. To investigate the possible association, we primarily relied on the nationally representative individual-level data for sixty-two countries from the World Bank's Global Findex database 2021 (Demirgüç-Kunt et al., 2022). The Global Findex database 2021 has measured the individual's assessment of their financial resilience and financial worry, along with other personal-level factors that might influence their assessment of the same. For cultural values, we have included five dimensions of national culture proposed by Hofstede et al. (2010), viz., power distance, individualism, uncertainty avoidance, and long-term orientation.

For analysis, we have employed a multilevel regression approach, as the individual's assessment of their financial resilience and financial worry is influenced by both personal (socioeconomic and demographic factors) and country-level (national culture) factors. Additionally, to ensure the robustness of our estimates, we have performed several supplementary analyses, which include estimation using the Bayesian regression technique, inclusion of macro-level control variables, and subsamples based on income, education, and gender.

Our results showed that culture is associated with the cross-country difference in the financial resilience and financial worry of individuals. We observed that financial resilience is positively associated with individualism and long-term orientation and weakly negatively associated with masculinity. In case of financial worry, we observed that it is negatively associated with individualism and long-term orientation and positively associated with power distance and masculinity.

The current study extended the discourse on financial resilience and financial worries among individuals, highlighting the plausible role of national culture behind the cross-country differences. To the best of our awareness, ours is the first study to explore such an association.

The remaining part of this study is organized as follows: Section 3.2 presents the theoretical background and literature review; Section 3.3 discusses data and methodology employed, which is followed by the results and discussion in Section 3.4; Lastly, Section 3.5 presents the conclusions, implications, and limitations of our research.

3.2 Literature Review

3.2.1 Financial resilience

Initial evidence of the concept of resilience in academic literature is from the work of Holling (1973). In later years, the term became popular in other academic domains too, wherein it was conceptualized accordingly in a context-specific manner. Despite context-specific adaptations, the concept comprises at least one or more of the three core characteristics: to resist shock, to recover from shock, and to adapt positively in the event of shock.

The introduction of the concept of financial resilience in the context of consumer finance is a relatively recent development; however, the concept has gained considerable attention in academia and from policymakers, especially in the aftermath of the 2008 financial crisis and lately due to the economic disruption caused by the COVID-19 pandemic. Consequently, efforts were made to conceptualize financial resilience, identify appropriate measures to gauge individual's preparedness against financial shock, and identify the key determinants of financial resilience, as is evident from extant literature

(Lusardi et al., 2011; Salignac et al., 2019; McKnight & Rucci, 2020; Lin et al., 2022; Hasler et al., 2023).

Amid the differences in conceptualizations of financial resilience by different authors, there is a concurrence that it is the ability of an individual or household to deal with financial shock. Further, for measuring financial resilience, the ability of an individual or household to come up with a certain amount of money within a specified time frame is recognized as a core indicator of one's financial resilience (Lusardi et al., 2021).

At the individual or household level, the difference in financial resilience is likely to be affected by factors such as income, education, financial inclusion, financial literacy, and financial capability (Taylor, 2011; Lusardi et al., 2011; Salignac et al., 2022); however, the differences across the countries are likely to be influenced by national culture, social protection interventions, and other macroeconomic factors (Klapper & Lusardi, 2020; Salignac et al., 2019).

3.2.2 Financial Worry

Considering the conceptualization of Borkovec et al. (1983), worry refers to the range of emotions that are seemingly negative, persistent, and unmanageable. Worrying involves continual mental effort toward resolving issues with uncertain but undesirable outcomes. Excessive worrying is likely to manifest itself into several undesirable behavioral outcomes for an individual or household, such as lower acceptance of ambiguous situations, heightened sense of probable risks and adverse outcomes, sluggish decision-making (Freeston et al., 1994), lack of focus and attention, and inadequate problem-solving (Nolen-Hoeksema et al., 2008).

Financial worry is defined as “repeated and negative thinking about the uncertainty of one’s (future) financial situation” (De Bruijn & Antonides, 2020). Financial worry is one

of the five major sources of concern, as suggested by Tallis et al. (1992). Furthermore, it is the major stressor among the other sources of worry (*PwC, 2022*). Financial worry is associated with a host of adverse psychological and behavioral outcomes. At the workplace, it is likely to manifest itself in the form of poor performance, lower commitment levels, and a higher likelihood of engaging in avoidable accidents (Meuris & Leana, 2018; Rosso et al., 2024). Financial worries are likely to amplify marital discord (Conger et al., 1990; Gudmunson et al., 2007), lower the level of life satisfaction and well-being (Tay et al., 2016; Bayuk & Altobello, 2019), and exacerbate physical health issues (Rios & Zautra, 2011).

The heterogeneity in the level of worry experienced by individuals or households could be explained by various personal and country-specific contextual factors. The personal factors include socio-economic and demographic characteristics (Weissman et al., 2020; De Bruijn & Antonides, 2020; Magwegwe et al., 2022), financial behavior, and psychological aspects such as self-efficacy and self-control (Netemeyer et al., 2018; Van Raaij et al., 2023), social support at personal and professional levels (Meuris & Gladstone, 2024; Tran et al., 2018), and country-specific contextual factors such as national culture, income inequality, and social protection policies (Riitsalu & Raaij, 2020).

3.2.3 National Culture

Culture is a popular construct that has attracted considerable scholarly attention from different domains for over a century, as evident from the compilation of more than one hundred fifty definitions of "culture" by Kroeber and Kluckhohn (1952) and the many others that came afterwards. Furthermore, the discussion of Koltko-Rivera (2004) on the construct "worldview" suggests that the construct of culture isn't substantially different from what many have referred to as "value orientations," "world outlook," and

"philosophy of life," to name a few. This underscores the complexity associated with the conceptualization and operationalization of the construct of culture.

Despite the difference in the way culture is conceptualized, the following are some aspects that appear common to most of these definitions: a) culture is a societal-level construct; b) it is based on certain core beliefs and values, which manifest themselves into specific preferences, practices, behaviors, and decisions; and c) culture is formed over a long period of time, and it's a relatively stable construct.

Although there existed numerous definitions of culture, most of them lacked quantification. Some earlier efforts of quantification include the work of Kuhn and McPartland (1954), England (1967), and Rokeach (1973). However, a significant contribution regarding the quantification came from Hofstede (1983). Other prominent frameworks to quantify the culture include the work of Schwartz (1994), Inglehart (1997), and House et al. (2004). Additionally, there have been some attempts to explain culture beyond a value-based framework (see Hall, 1997; Leung et al., 2002; and Gelfand et al., 2006 for details). However, the non-value-based framework remained relatively less popular due to multiple practical reasons, such as lack of quantification, fewer societies under comparison, and theoretical connections to the research objective.

Finally, notwithstanding the associated complexities, culture remains a popular construct in various research fields, wherein the different frameworks or their sub-dimensions are employed based on values that have relevance in a field.

Hofstede's cultural values and its association with personal finance

The current study has adopted the cultural framework proposed by Hofstede et al. (2010), as Hofstede's dimensions are concise, widely used, offer wide coverage of countries, and

were found to be associated with the factors that could influence one's assessment of their financial resilience and financial worry, such as financial literacy (Brown et al., 2018; Klapper & Lusardi, 2020), financial capability, i.e., one's ability to use financial knowledge adequately and prudent financial behavior (Bialowolski et al., 2023), financial savings & investments (Lu et al., 2021), borrowing (Peterson et al., 2015), and insurance coverage (Chui & Kwok, 2008), among others, in extant literature. Thus, using Hofstede's dimensions of national culture for this study seems to be a reasonable choice and will make the results more relatable to other studies.

The cultural framework proposed by Hofstede et al. (2010) measures national culture across six dimensions. These six dimensions are power distance, masculinity, individualism, uncertainty avoidance, long-term orientation, and indulgence. However, we did not include the cultural dimension of indulgence in our study, as indulgence is negatively correlated to a long-term orientation (Hofstede, 2011). The following discussion, with suitable reference from the extant literature, highlights the association of Hofstede's (Hofstede et al., 2010) dimensions of national culture under consideration with the financial conduct of individuals or consumers that may influence their assessment of financial resilience and financial worry.

Power Distance

Power distance implies “the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede et al., 2010). High-power distance societies are often characterized by fewer rich people and a large number of very poor populations, whereas in low-power distance societies, there exists a large middle-class population. Also, in countries with high power distances, information asymmetry is likely to be high, and the economic mobility

opportunities for the weaker sections of society are limited. With regard to financial decision-making at the individual or household level, in high power distance societies, authority usually lies with the head of the family, and the other members may have no problems in delegating their decision-making authority. In the extant literature, high power distance is found to be associated with a lower insurance consumption rate (Chui & Kwok, 2008) and lower financial knowledge (Agarwalla et al., 2015; Ahunov & Van Hove, 2020).

Masculinity

Masculine society, as per Hofstede et al. (2010), refers to a society where the dominant value, irrespective of one's gender, is male assertiveness, which is characterized by a higher preference for earning, recognition, and materialistic or status-centric pursuits as compared to the feminine values, which are centered on quality of life. The likelihood of an individual being discontent is higher in a masculine society, as there is a higher societal pressure to perform well. In extant literature, masculinity is associated with risky financial behavior (Meier-Pesti and Penz, 2008), higher likelihood of income over expenditure (Peterson et al., 2015), and lower instances of subscribing to life insurance (Chui and Kwok, 2008).

Individualism

Individualism measures the degree of interpersonal ties among the members of a society. In a highly individualistic society, group ties are loose, and individuals are expected to care primarily for themselves and their immediate family members. In contrast, in a collectivist society (low on individualism), group ties are strong, and individuals are supposed to look after their extended family members and even friends (Hofstede et al., 2010). In individualistic societies, as the group ties are loose, the friction to interact with

an out-group member is relatively lower, facilitating higher trust in out-group members or entities. This characteristic of individualistic societies facilitates higher engagement with the formal financial system, and thus, the members are more likely to be financially included (Lu et al., 2021; Chui & Kwok, 2008). Additionally, due to weak social connections, people in individualistic societies are likely to have unreliable informal financial support and systems (Salignac et al., 2019). This lack of informal support promotes a sense of self-dependence, which is evident from a higher level of financial capability (Bialowolski et al., 2023) and financial literacy (Ahunov & Van Hove, 2020) in individualistic societies.

Uncertainty Avoidance

Uncertainty avoidance refers to society's tolerance towards ambiguity and unstructured situations. Individuals from high uncertainty avoidant societies seek structure and orderliness that are likely to make events more predictable and interpretable, and they consider uncertain situations as threats (Hofstede et al., 2010). In financial matters, individuals from uncertainty-avoidant societies are likely to show greater preference for conservative or low-return investments over stocks, as they require less informed decision-making and are deemed safer. Also, they are relatively more likely to be anxious and demonstrate higher levels of concern for matters pertaining to finance and health (Hofstede et al., 2010). In the extant literature, we observed mixed evidence regarding the influence of uncertainty avoidance on financial behavior. At one end, we found high uncertainty avoidance to be negatively associated with some of the resilience-promoting characteristics, such as financial literacy and risk diversification (Klapper & Lusardi, 2020), and financial capability (Bialowolski et al., 2023). On the other end of the spectrum, uncertainty avoidance was found to be positively associated with practices that

may promote financial resilience and lower financial worry, such as higher savings (Ang, 2009), insurance subscriptions (Chui & Kwok, 2008), and lesser use of credit (Peterson et al., 2015).

Long-term orientation

Long-term orientation reflects the magnitude of future-centric values in society. In general, long-term orientation is characterized by values and practices such as perseverance, thrift, pragmatism, goal orientation, humility, self-discipline, and emphasis on learning (Hofstede et al., 2010). In terms of economic decision-making, long-term orientation is associated with frugality, delay of instant gratification, savings, investments, and swift economic growth. Academic research regarding the influence of long-term orientation on an individual's financial resilience and financial worry presents multiple pieces of evidence of positive financial behavior. Individuals with long-term-oriented values are more likely to resist the present-oriented temptation (i.e., exhibiting high self-control) for the sake of the greater good in the future (Muraven & Baumeister, 2000). Also, individuals from long-term-oriented cultures are more likely to be financially literate and aware of risk diversification strategies (Klapper & Lusardi, 2020), have higher saving rates (Peterson et al., 2015), are less dependent on credit cards (De Mooij & Hofstede, 2002), and show higher financial capability (Bialowolski et al., 2023).

3.3 Data and Methodology

3.3.1 Data

For the current study, we have utilized the data from different sources. Primarily, we have used the World Bank's Global Findex Database 2021. The Global Findex Database 2021 is a nationally representative survey of about 128,000 individuals from 123 countries. It consists of indicators of the respondent's subjective assessment of their financial

resilience and financial worry, access and use of financial services, and the socioeconomic and demographic profile. Additionally, we have used several country-level control variables (details in section: 3.3.2 *Variables/Independent variables/Other Covariates*) from the World Development Indicators database. Our explanatory variables are the dimensions of national culture based on the framework of Hofstede et al., 2010. For our analysis, we focused exclusively on the economies for which the data is available at the individual level as well as for the dimensions of Hofstede's cultural values under consideration; therefore, we included 62 countries[17] in our study. The latter part of this section provides a description of all the variables used in this study.

3.3.2 Variables

Dependent Variables

Financial Resilience

Based on the conceptualization of Demirguc-Kunt et al. 2022, financial resilience has been measured as a respondent's subjective assessment of their ability to come up with the money equivalent to 1/20th of per capita gross national income (in respondent's local currency) within the next thirty days in case of emergency. For the purpose of assessment, the respondent's ability was measured on a scale of 0-3, where the codes have the following meanings: 0: not possible (not resilient), 1: very difficult (somewhat resilient), 2: somewhat difficult (moderately resilient), 3: not difficult (highly resilient).

[17] Argentina, Australia, Austria, Bangladesh, Brazil, Bulgaria, Canada, China, Colombia, Croatia, Czechia, Denmark, Egypt, El Salvador, Estonia, Finland, France, Germany, Ghana, Greece, Hungary, India, Indonesia, Iran, Iraq, Ireland, Italy, Japan, South Korea, Latvia, Lithuania, Malaysia, Malta, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Romania, Russia, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, Spain, Sweden, Tanzania, Thailand, Turkey, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Zambia

Financial Worry

We included the following cases of financial worry for this study:

i. "Not being able to pay for medical costs in case of a serious illness or accident."

ii. "Not having enough money to pay for monthly expenses or bills."

iii. "Not having enough money for your old age."

For the purpose of measurement, the respondent's level of worry was coded on a scale of 0-2, where the codes have the following meanings: 0: not worried, 1: somewhat worried, 2: very worried.

Independent Variables

Variable of Interest: National Culture

Based on the literature review, we considered the influence of a country's cultural characteristics by including the following dimensions of Hofstede's cultural framework: power distance, masculinity, individualism, uncertainty avoidance, and long-term orientation. These dimensions measure the particular aspects of culture on a linear scale of 0 and above, where a higher value indicates a higher degree of power distance, masculinity, individualism, uncertainty avoidance, and long-term orientation.

Control Variables

Given that the individual's socioeconomic and demographic characteristics are likely to influence one's assessment of their state of being financially resilient and the level of worry, we have included gender, age, education level, and income level as control variables in our study. Also, we have included indicators of financial inclusion (formal

savings and borrowings), as the same is observed to have a considerable influence on one's assessment of being financially resilient and the level of financial worry (Prina, 2015; Ruiz Ortega, 2013; Magwegwe et al., 2022).

Other Covariates

Additionally, we have included variables such as GDP per capita (based on purchasing power parity), GDP growth rate, the Gini index, urbanization, and the Universal Health Coverage Index from the World Development Indicators database for the robustness checks.

3.3.3 Summary Statistics

The descriptive summary of data based on 62 countries is available in table 3.1. Following abbreviations are used in the table 3.1:

FR: Financial resilience; **FWM:** Financially worried for medical expenses; **FWB:** Financially worried due to monthly bills and expenses; **FWO:** Financially worried due to old age; **PDI:** Power Distance; **MAS:** Masculinity; **IDV:** Individualism; **UAI:** Uncertainty Avoidance; **LTO:** Long Term Orientation; **GDP_PC:** GDP Per Capita (purchasing power parity based); **GDP_GR:** GDP growth rate (in %); **GINI:** GINI Index (in %); **URBN:** Level of urbanization (in %); **UHC:** Universal health coverage index.

Table 3.1: Descriptive summary

Individual-level Variables					
		in %			in %
Gender	0	51.17	**FR**	0	5.9
	1	48.83		1	20.9
				2	28.1
Age	0	31.40		3	45.1
	1	30.05			
	2	24.92			
	3	13.62			
Education	0	18.34	**FWM**	0	34.9
	1	52.25		1	30.6
	2	29.41		2	34.5
Income	0	15.53			
	1	17.31	**FWB**	0	47.2
	2	19.39		1	28.4
	3	22.13		2	24.3
	4	25.65			
Formal Savings	0	58.33	**FWO**	0	35.1
	1	41.67		1	35.3
				2	29.5
Formal Borrowings	0	63.62			
	1	36.38			

Country-level Variables			
	Min.	**Median**	**Max.**
PDI	11	66	104
MAS	5	49	110
IDV	12	38	91
UAI	8	65	112
LTO	4	47	100
GDP_PC	3391	32466	115304
GDP_GR	-12.0	-3.5	7.2
GINI	24	34.6	54.4
URBN	35	73	100
UHC	38	79	91

Gender – 0: Female **, 1** Male; **Age** – **0**: 15-32, **1**: 33-48, **2**:49-65, **3**:65 and above; **Education – 0:** Primary or below, 1: Secondary level, 2: Tertiary; **Income** – **0:** Quintile 1, **1:** Quintile 2, **2:** Quintile 3, **3:** Quintile 4 , **4:** Quintile 5; **Formal Savings – 0:** No, **1:** Yes; **Formal Borrowings** – **0:** No, **1:** Yes; For **FR**:- **0:** Least resilient **1:** somewhat resilient, **2:** moderately resilient; **3:** High resilient; For **FWM**, **FWB**, and **FWO**:- **0:** not worried **1:** somewhat worried, **2:** highly worried.

Descriptive statistics for individual-level variables FR, FWM, FWB, and FWO are based on 64429, 65686, 65798, and 65618 observations, respectively, for all other individual-level variables it was based on 67107 observations. Descriptive statistics for all country-level variables were based on 62 observations.

Following variables were scaled for the analysis purpose: PDI, MAS, IDV, UAI, LTO, GDP_PC, GDP_GR, GINI, URBN,UHC.

3.3.4 Empirical Analysis

Model Specification

For our study, we aimed to analyze how the individual's assessment of their financial resilience and the level of financial worry relate to their personal-level characteristics (socioeconomic and demographic factors, financial behavior) as well as the characteristics of the country (dimensions of national culture) they are from. A scenario where the outcome variable is influenced by both individual- and group-level variables often requires a multilevel modeling approach (Hox, 1995; Hox et al., 2017). Additionally, since our dependent variables were measured on an ordinal scale, we estimated the following ordinal multilevel probit model (full model) with random-intercept[18]:

$$\boldsymbol{FR_{ij} = \beta_o + \beta_1 X_{1ij} + \beta_2 X_{2j} + e_{ij} + u_j} \ldots\ldots \quad (1)$$

$$\boldsymbol{FW_{ij} = \beta_o + \beta_1 X_{1ij} + \beta_2 X_{2j} + e_{ij} + u_j} \ldots\ldots \quad (2)$$

Here, FR_{ij} and FW_{ij} represents outcome variables financial resilience and financial worry[19], respectively, for an individual "i" from country "j". X_{1ij} is the vector of individual-level independent variables (individual-level characteristics and financial inclusion/behavior) for an individual "i" from country "j". X_{2j} is the vector of country-level independent variables (dimensions of national culture) for country "j". e_{ij} refers to the error at the individual level, whereas u_j refers to the error at the country level. All the continuous variables were standardized before being employed for the analysis.

[18] We estimated the multilevel model with random intercept as we were primarily motivated to explore between-group differences and not the within-group heterogeneity.
[19] The model is the same for the different cases of worry.

Robustness Checks

To ensure the reliability of estimates, we employed several strategies to check for the robustness of our results. First, we introduced several macro-level control variables (one at a time) that are indicative of the policy or economic situation within a country. Second, we estimated the multilevel model for subsamples of respondents based on their income level (bottom 60%), education level (primary or below), and gender (female only). Third, we estimated the stated multilevel model using the Bayesian statistics technique, as suggested by Stegmueller (2013).

3.4 Results

Tables 3.2, 3.3, 3.4, and 3.5 report the results for financial resilience (FR), financial worry – medical expenses (FWM), financial worry – monthly bills and expenses (FWB), and financial worry – old age (FWO), respectively. We begin our analysis by estimating null models (check models 2a, 3a, 4a, and 5a from tables 3.2, 3.3, 3.4, and 3.5, respectively) for all the dependent variables. Null models estimate the country's effects on dependent variables in the absence of individual- or country-level explanatory variables.

The intraclass correlation (ICC), which represents the proportion of the total variation in the dependent variable that is observed across the country, for the null models, was 0.268, 0.304, 0.289, and 0.205 for FR, FWM, FWB, and FWO, respectively. The ICC values obtained in our case were common in the area of social sciences (Peugh, 2010) and could be classified as moderate to large (Hox, 2010), warranting multilevel analysis. Furthermore, as per Blise (2018), there is no downside to using a multilevel model for nested data, even if the ICC is very small. Thus, the use of multilevel modelling is suitably justified in our case.

Post null model estimation, we included individual and country-level variables in a stepwise manner. First, we included socioeconomic and demographic variables (models 2b, 3b, 4b, and 5b from tables 3.2, 3.3, 3.4, and 3.5, respectively). Next, we included the indicators of financial inclusion/behavior (models 2c, 3c, 4c, and 5c from tables 3.2, 3.3, 3.4, and 3.5, respectively). Finally, in our full model, we included the dimension of national culture (models 2d, 3d, 4d, and 5d from tables 3.2, 3.3, 3.4, and 3.5, respectively).

Results: Financial Resilience (post null model estimation)

As we move from null model 2a to model 2b, we observe the influence of socioeconomic and demographic variables on the individual's assessment of their financial resilience. It was observed that males, the highly educated, and those from high-income groups were more likely to express a higher sense of financial resilience. Additionally, in the case of age groups, the most senior respondents were likely to be the most resilient. This finding is most likely due to higher experience in financial management and fewer responsibilities in the later stages of life. Further, the inclusion of variables indicative of financial inclusion and behavior (model 2c) revealed a positive association between the outcome variables and both formal savings and formal borrowings.

Finally, with the inclusion of the dimensions of national culture (model 2d), we observed a positive association of individualism and long-term orientation with financial resilience. The association between masculinity and financial resilience was negative but weakly significant. Further, the association was non-significant in the case of power distance and uncertainty avoidance.

Furthermore, we observed a considerable reduction in the intraclass correlation (ICC) with the inclusion of the cultural dimension. The reduction of ICC value, from 18.9% to 10.5% with the inclusion of cultural dimensions, suggests the considerable influence of

national culture in explaining the inter-country heterogeneity in the level of subjective financial resilience of individuals.

Results: Financial Worry (post null model estimation)

Since the results for all the cases of financial worry were broadly similar, we thus elaborated them in a collective manner. However, we will highlight exceptions wherever applicable.

Post null model estimation, as we included the socioeconomic and demographic variables (model 3b, 4b, and 5b), we observed that males, the highly educated, and those from the high-income group are less likely to be worried than others. Regarding the influence of age, we observed a non-linear inverted U-shaped pattern, indicating a rise in worry level with age followed by a decrease in the adults of the most senior age group.

In the next step (models 3c, 4c, and 5c), as we included the indicators of financial inclusion/behavior, we observed that saving is negatively related to an individual's level of financial worry. Also, in the case of borrowing, we observed a positive association between borrowing and an individual's sense of financial worry.

Further, in the last step (models 3d, 4d, and 5d), as we included the dimensions of national culture, we observed a significant positive association of financial worries with power distance and masculinity, while the association is negative in the case of individualism and long-term orientation. The association was non-significant in the case of financial worry and uncertainty avoidance.

Notably, the change in the interclass correlation (ICC) values with the inclusion of cultural values was considerable (decrease of minimum 10.3% to maximum 17.5%) for

all the cases of financial worry, suggesting the strong association of cultural values with the cross-country heterogeneity of an individual's sense of financial worry.

Results: Robustness Checks

Further, we performed multiple supplementary analyses to test the robustness of our estimates. First, we included several country-level variables (one at a time) indicative of a country's economic environment, which are likely to be associated with an individual's assessment of financial resilience and financial worry. These variables include GDP per capita (PPP based), GDP growth rate, universal health coverage index, level of urbanization, and GINI coefficient. Across different models, the influence of cultural dimensions remained largely unaffected in the presence of other country-level variables. Second, we estimated our main model with sub-samples of the population based on income level (bottom 60%), education level (primary or less only), and gender (female only). Estimates based on sub-samples were consistent with the original estimates for all the sub-samples. Third, we estimated our main models by employing the Bayesian statistics approach using the MCMCglmm package in R, and the results were consistent with our main results. Results of all the supplementary analyses are available in the appendix (Table 3.2.1, 3.2.2, 3.3.1, 3.3.2, 3.4.1, 3.4.2, 3.5.1, 3.5.2, and 3.6.1).

Table 3.2: Multilevel analysis – Financial Resilience (FR)

	2a		2b			2c			2d		
	β	**SE**	**β**	**SE**		**β**	**SE**		**β**	**SE**	
Male			0.182	0.009	***	0.168	0.009	***	0.168	0.009	***
Age: 33-48			0.104	0.012	***	0.091	0.012	***	0.090	0.012	***
Age: 49-65			0.059	0.013	***	0.067	0.013	***	0.066	0.013	***
Age: 66-above			0.131	0.017	***	0.170	0.017	***	0.168	0.017	***
Education: Secondary School			0.363	0.013	***	0.317	0.013	***	0.316	0.013	***
Education: Tertiary and above			0.676	0.016	***	0.568	0.016	***	0.567	0.016	***
Income: Quintile 2			0.257	0.015	***	0.228	0.016	***	0.228	0.016	***
Income: Quintile 3			0.428	0.015	***	0.379	0.015	***	0.379	0.015	***
Income: Quintile 4			0.621	0.015	***	0.550	0.015	***	0.551	0.015	***
Income: Quintile 5			0.921	0.015	***	0.813	0.016	***	0.814	0.016	***
Formal Saving						0.517	0.011	***	0.516	0.011	***
Formal Borrowing						0.139	0.011	***	0.138	0.011	***
Power Distance									-0.067	0.063	
Masculinity									-0.088	0.045	.
Individualism									0.220	0.062	***
Uncertainty Avoidance									-0.024	0.047	
Long-term Orientation									0.145	0.046	**
Intercept 0|1	-1.829	0.078	-0.945	0.074		-0.839	0.064		-0.839	0.048	
Intercept 1|2	-0.748	0.077	0.236	0.074		0.367	0.064		0.366	0.047	
Intercept 2|3	0.147	0.077	1.220	0.074		1.378	0.064		1.378	0.048	
Variance: Country	0.366		0.323			0.233			0.117		
ICC	0.268		0.244			0.189			0.105		
Pseudo R Square (AIC)	138980		130376			127861			127828		
Observations	64429		64429			64429			64429		
Countries	62		62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.3: Multilevel analysis – Financial Worry for medical expenses (FWM)

	3a		3b			3c			3d		
			β	SE		β	SE		β	SE	
Gender: Male			-0.172	0.009	***	-0.168	0.009	***	-0.168	0.009	***
Age: 33-48			0.120	0.012	***	0.120	0.012	***	0.121	0.012	***
Age: 49-65			0.140	0.013	***	0.133	0.013	***	0.134	0.013	***
Age: 66-above			-0.107	0.017	***	-0.121	0.017	***	-0.120	0.017	***
Education: Secondary School			-0.120	0.014	***	-0.101	0.014	***	-0.101	0.014	***
Education: Tertiary and above			-0.280	0.017	***	-0.241	0.017	***	-0.241	0.017	***
Income: Quintile 2			-0.119	0.016	***	-0.108	0.016	***	-0.108	0.016	***
Income: Quintile 3			-0.245	0.016	***	-0.224	0.016	***	-0.224	0.016	***
Income: Quintile 4			-0.375	0.016	***	-0.345	0.016	***	-0.346	0.016	***
Income: Quintile 5			-0.611	0.016	***	-0.568	0.016	***	-0.568	0.016	***
Formal Saving:						-0.234	0.011	***	-0.233	0.011	***
Formal Borrowing						0.039	0.011	***	0.039	0.011	***
Power Distance									0.172	0.063	**
Masculinity									0.119	0.045	**
Individualism									-0.315	0.062	***
Uncertainty Avoidance									0.037	0.047	
Long-term Orientation									-0.134	0.046	**
Intercept 0|1	-0.420	0.084	-0.923	0.085		-0.967	0.081		-0.985	0.048	
Intercept 1|2	0.522	0.084	0.058	0.085		0.019	0.081		0.001	0.048	
Variance: Country	0.438		0.428			0.388			0.117		
ICC	0.304		0.300			0.280			0.105		
Pseudo R Square (AIC)	126437		122701			122240			122175		
Observations	65686		65686			65686			65686		
Countries	62		62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** p < 0.1; * p < 0.05; ** p < 0.01; ***p < 0.001; **ICC:** Intraclass correlation

Table 3.4: Multilevel analysis – Financial Worry for monthly bills and expenses (FWB)

	4a		4b			4c			4d		
	β	**SE**	**β**	**SE**		**β**	**SE**		**β**	**SE**	
Gender: Male			-0.148	0.010	***	-0.140	0.010	***	-0.140	0.010	***
Age: 33-48			0.099	0.012	***	0.098	0.012	***	0.099	0.012	***
Age: 49-65			0.115	0.013	***	0.103	0.014	***	0.104	0.014	***
Age: 66-above			-0.209	0.017	***	-0.232	0.017	***	-0.231	0.017	***
Education: Secondary School			-0.207	0.014	***	-0.181	0.014	***	-0.181	0.014	***
Education: Tertiary and above			-0.436	0.017	***	-0.382	0.017	***	-0.382	0.017	***
Income: Quintile 2			-0.186	0.016	***	-0.171	0.016	***	-0.171	0.016	***
Income: Quintile 3			-0.341	0.016	***	-0.313	0.016	***	-0.314	0.016	***
Income: Quintile 4			-0.499	0.016	***	-0.459	0.016	***	-0.460	0.016	***
Income: Quintile 5			-0.752	0.016	***	-0.692	0.016	***	-0.693	0.016	***
Formal Saving						-0.339	0.011	***	-0.338	0.011	***
Formal Borrowing						0.055	0.011	***	0.056	0.011	***
Power Distance									0.145	0.058	*
Masculinity									0.097	0.042	*
Individualism									-0.292	0.057	***
Uncertainty Avoidance									0.004	0.043	
Long-term Orientation									-0.167	0.042	***
Intercept 0|1	-0.053	0.081	-0.746	0.080		-0.811	0.075		-0.823	0.045	
Intercept 1|2	0.861	0.081	0.225	0.080		0.170	0.075		0.158	0.045	
Variance: Country	0.406		0.377			0.326			0.100		
ICC	0.289		0.274			0.246			0.091		
Pseudo R Square (AIC)	121987		116653			115745			115681		
Observations	65798		65798			65798			65798		
Countries	62		62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** p < 0.1; * p < 0.05; ** p < 0.01; ***p < 0.001; **ICC:** Intraclass correlation

Table 3.5: Multilevel analysis – Financial Worry due to old age (FWO)

	5a		5b			5c			5d		
	β	**SE**	**β**	**SE**		**β**	**SE**		**β**	**SE**	
Gender: Male			-0.150	0.009	***	-0.147	0.009	***	-0.147	0.009	***
Age: 33-48			0.233	0.012	***	0.228	0.012	***	0.229	0.012	***
Age: 49-65			0.244	0.013	***	0.234	0.013	***	0.235	0.013	***
Age: 66-above			-0.186	0.016	***	-0.200	0.016	***	-0.198	0.016	***
Education: Secondary School			-0.156	0.014	***	-0.142	0.014	***	-0.142	0.014	***
Education: Tertiary and above			-0.263	0.016	***	-0.236	0.016	***	-0.235	0.016	***
Income: Quintile 2			-0.112	0.016	***	-0.104	0.016	***	-0.105	0.016	***
Income: Quintile 3			-0.230	0.016	***	-0.214	0.016	***	-0.215	0.016	***
Income: Quintile 4			-0.333	0.015	***	-0.311	0.015	***	-0.312	0.015	***
Income: Quintile 5			-0.552	0.015	***	-0.520	0.016	***	-0.520	0.016	***
Formal Saving						-0.218	0.011	***	-0.217	0.011	***
Formal Borrowing						0.090	0.011	***	0.090	0.011	***
Power Distance									0.105	0.056	.
Masculinity									0.100	0.040	*
Individualism									-0.232	0.055	***
Uncertainty Avoidance									0.043	0.041	
Long-term Orientation									-0.101	0.040	*
Intercept 0|1	-0.421	0.065	-0.848	0.066		-0.883	0.064		-0.892	0.043	
Intercept 1|2	0.616	0.065	0.230	0.066		0.201	0.064		0.192	0.043	
Variance: Country	0.258		0.250			0.231			0.091		
ICC	0.205		0.200			0.187			0.084		
Pseudo R Square (AIC)	131868		127962			127514			127466		
Observations	65618		65618			65618			65618		
Countries	62		62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

3.4.1 Discussion

Extant literature is abundant with evidence suggesting the influence of national culture on financial behavior, decision-making, and other related concepts. Yet the role of culture in explaining the inter-country heterogeneity of an individual's subjective assessment of their financial resilience and worry is not very well explained. To address this research gap, the current study attempts to explore the association of national culture with the individual's subjective assessment of their financial resilience and financial worry by employing a multilevel regression model. For this purpose, we have utilized the dimensions of national culture proposed by Hofstede et al. (2010), as extant literature presents multiple pieces of evidence highlighting that Hofstede's national culture dimensions were closely related to financial behavior and decision-making.

The results showed a positive association of individualism with the respondent's assessment of their financial resilience and a negative association with their state of financial worry. The results are relatable to the extant literature, as the evidence suggests a positive association of individualism with financial inclusion, financial capability, and financial literacy (Lu et al., 2021; Bialowolski et al., 2023; Ahunov & Van Hove, 2020), which are precursors to the financial well-being of which financial resilience and financial worry are two key components.

In the case of long-term orientation, we observed a positive relationship with individuals' assessments of their financial resilience, whereas the association was negative in the case of financial worry. Similar to individualism, long-term orientation is also positively related to those aspects of financial behavior and decision-making and other related constructs that are precursors to financial well-being, such as high saving rates, lesser dependence on credit cards, higher financial literacy, financial capability, and self-control

(Muraven & Baumeister, 2000; Klapper & Lusardi, 2020; Peterson et al., 2015; De Mooij & Hofstede, 2002; Bialowolski et al., 2023).

For masculinity, the relationship was weakly negative in the case of financial resilience. However, it was significantly positive in the case of financial worry. The outcome can be attributed to materialistic and status-centric lifestyles in masculine societies, which prioritize recognition over well-being (Hofstede et al., 2010), are prone to overspending (Peterson et al., 2015), are more likely to engage in risky financial behavior (Meier-Pesti and Penz, 2008), and are less likely to plan for financial exigencies such as life insurance (Chui and Kwok, 2008).

The relationship between power distance and financial resilience was negative, although this result was not statistically significant; in contrast, the relationship was significantly positive in the case of financial worry. In high-power-distance societies, the head of the family usually holds the responsibility for financial decision-making, which can create, among others, a feeling of lack of control over personal finances, a precursor to financial well-being (Salignac et al., 2020), and may also promote a sense of financial worry.

We did not observe a significant association between uncertainty avoidance and the individual's perception of their financial resilience and the state of financial worry. A plausible explanation lies in the mixed evidence (i.e., positive and negative associations) related to the links between uncertainty avoidance and the characteristics promoting financial well-being.

In the case of indicators of financial behavior or inclusion, i.e., formal savings and formal borrowings, we observed a positive association of formal savings and borrowing with financial resilience, which is consistent with the other evidence from the extant literature (Prina, 2015; Ruiz Ortega, 2013). When considering financial worry, association was

positive with formal savings and negative with formal borrowings for all the cases of financial worry. Notably, these observations were consistent with the outcomes from extant literature (Magwegwe et al., 2022).

In the case of the socioeconomic and demographic profile of respondents, males, the highly educated, and those from higher income groups were more likely to be financially resilient and less likely to be financially worried, which is consistent with the existing literature (Salignac et al., 2019; De Bruijn & Antonides, 2020). Additionally, age is non-linearly associated with financial resilience and worry. With financial resilience, the association was positive, with the senior-most age group being the most resilient one, which is consistent with the findings of Lusardi et al. (2011), Salignac et al. (2022), and Hasler et al. (2023). In the case of worry, the association was negative with the senior-most age group and positive with the other age group. This outcome is consistent with the findings of Bruijn and Antonides (2020) and Megwegwe et al. (2022). The higher resilience and lower worry at later ages could be attributed to the fact that higher age is often associated with a lower level of money management stress (Netemeyer et al., 2018).

Furthermore, our results remained largely consistent in terms of the nature of the association, relative magnitude, and significance level across the different scenarios employed for robustness checks: a.) inclusion of contextual or country-level variables; b.) sub-samples based on income, education, and gender; and c.) estimation based on a Bayesian statistics approach.

3.5 Conclusion and Implications

3.5.1 Findings and policy implications

The present study explores the association of national culture with an individual's subjective assessment of their financial resilience and financial worry by employing a

multilevel regression model. We used the Global Findex Database (2021) for the individual-level dependent variables and socio-economic and demographic control variables. Also, we have used Hofstede's (Hofstede et al., 2010) national cultural values. Our results suggest a significant association of cultural values with financial resilience and financial worry. Specifically, we observed a significant positive association of individualism and long-term orientation with financial resilience. In the case of financial worry, the association was significantly positive for power distance and masculinity and negative for individualism and long-term orientation. Also, it is to be noted that in the case of uncertainty avoidance, the observed association was non-significant for both financial resilience and financial worry. Our results are new and insightful for policymakers, academicians, and practitioners concerned with financial well-being, i.e., financial resilience and the financial worry of individuals.

Affiliation with a specific cultural group could have a significant impact on the individual's outlook across various contexts, ultimately influencing behavior and decision-making. Current research extended the discourse in this direction with an attempt to observe the association of cultural values with financial resilience and financial worry of individuals. The key policy-level implications of this research emphasize the focus on cultural values while planning for the interventions required to promote financial resilience and financial worry. For example, countries high on individualism may employ laissez-faire policies with support nets for vulnerable populations. While, in the case of collectivistic cultures, social norms and community leaders may be needed to guide the behavior of individual households. In case of low long-term orientation and high masculinity, interventions to promote a prudent financial attitude are likely to be helpful. In countries with high power distance, more democratic and transparent financial rules may reduce financial worry.

3.5.2 Limitations and directions for future research

In addition to the contributions, this study has some limitations. First, self-assessment-based responses are often associated with subjectivity bias, leading to over- or underestimation, specifically in the case of the Findex 2021 survey, which was carried out during the COVID-19 pandemic phase. Second, this study did not include some factors known to influence respondents' financial behavior and decision-making, such as personality, attitude toward money, financial knowledge, and capability, as the Findex 2021 survey did not measure the same. Future surveys/studies should attempt to incorporate these factors. Third, the current study is limited by the single measure of resilience, future surveys/studies should try to includes alternate measures of financial resilience and worry in the same research or survey, which will help establish the robustness of estimates. Lastly, ours are not causal estimates; however, given the strong association of cultural values with financial behavior and decision-making in multiple past research studies, the result should be considered relevant for academic and policy-oriented literature.

Chapter 4:

Egalitarian Gender Attitudes and Financial Satisfaction of Households: A Cross-country Study

4.1 Introduction

Egalitarian gender norms are not just constituents of fundamental human rights but also a key element in achieving sustainable economic growth. In recent years, comparable progress has been observed in terms of educational achievements; however, the same is not yet true in the case of employment and leadership roles. As per the World Employment and Social Outlook: Trends 2024 survey (International Labor Office, 2024), the labor force participation of women remains largely unchanged at around 48% compared to the 73% of men for the last fifteen years. Additionally, it has been observed that females mostly occupy lower-income jobs and lack proportionate representation in leadership positions (WEF, 2024; UNESCO, 2025). It is, however, pertinent to note that these numbers vary across economies. While European and North American countries are at the forefront of closing the gender parity gap, those lagging considerably behind are from South Asia, the Middle East, and North Africa (WEF, 2024).

In an organizational context, gender-diverse teams and leadership are associated with higher revenue and profitability, thorough and communal decision-making, improved team performance, and innovation (Rock et al., 2016; Post, 2015). At the household level, greater participation of females in decision-making relates positively with the efficient allocation of household resources, particularly towards education, food and nutrition, and other family-centric goals (Gummerson & Schneider, 2013; Doss, 2013; Pickbourn, 2015). Despite such beneficial outcomes, female participation at the organizational and

household level remains underwhelming across many parts of the world, likely due to ingrained personal attitudes, prevailing gender norms within the societies, and lack of institutional interventions.

In this research, we are particularly concerned with the question: could the varied attitudes of individual toward female education, employment, and leadership be associated with the financial well-being of households? This question deserves scholarly attention, as the literature suggests that egalitarian gender norms promote enhanced educational achievements, increased workforce participation, and leadership opportunities for women, which could improve their economic opportunities and thus their subjective financial well-being. However, this relationship has so far remained largely unexplored.

Financial satisfaction, which is a subjective assessment of an individual's or household's contentment with their financial lives, is also considered a constituent of the subjective assessment of financial well-being (Clark et al., 2008). Extant research has so far explored various correlates of financial satisfaction; however, the association of personal beliefs regarding gender equality to an individual's financial satisfaction constitutes a relevant yet underexamined aspect of a household's financial well-being.

To overcome the gaps in existing literature, the current study explores the association between an individual's financial satisfaction and their attitudes toward gender equality in education, employment, and leadership. For this purpose, we utilized the individual-level data for the sixty-two countries from the World Value Survey—Wave 7 (Haerpfer et al., 2022). WVS-7 has employed multiple indicators to measure attitudes, including gender-specific attitudes and well-being, which encompasses financial well-being (i.e., financial satisfaction), as well as the socioeconomic and demographic profiles of respondents.

For analysis, we employed an OLS regression model as our dependent variable, i.e., financial satisfaction was measured on a ten-point Likert-type scale. Additionally, in order to have an adequate understanding of the cross-country heterogeneity, we segregated our sample based on the lower- and lower-middle-income countries, upper-middle-income countries, and high-income countries. Further, we also observed the said association for the gender-based samples for all three economy types.

Overall, the present study extended the discourse on the subjective assessment of the financial well-being of the households in the cross-country context and presented insights that are new and relevant from the policy perspective. The remaining part of this article contains four more sections. Section 2 consists of a literature review, section 3 describes data and methodology, section 4 presents results and discussion, and section 5 concludes this study.

4.2 Theoretical Background and Literature Review

4.2.1 Financial Satisfaction

The concept of financial satisfaction is not new to academic literature, though the same has been defined differently across different studies. Literature broadly agrees that it is a subjective assessment of an individual's or household's financial well-being, which refers to a state of contentment and security that comes from possessing sufficient financial resources to fulfill an individual's needs and objectives. Some key definitions of financial satisfaction, on which the trailing discussion is based, are:

- "subjective evaluation of individual's resource adequacy (George, 1992)"
- "a state of being healthy, happy, and free from worries (Zimmerman, 1995)"

- "financial satisfaction includes contentment with one's material (objective) and non-material financial (subjective) situation (Joo & Grable, 2004)"

- "the degree to which individuals and families have financial adequacy and security (Xiao et al., 2006)"

- "subjective evaluation of individual's financial situation, and is more akin to psychological attribute rather than an objective economic indicator (Ng & Diener 2014)"

Regarding the measurement of financial satisfaction, there exists evidence of both single-item measurements and multiple-item measurements. Measurement using a single item usually involves a single statement asking for respondents to state their satisfaction with their financial situation or condition on a Likert-type scale, as in the case of the multiple waves of the World Values Survey (Inglehart et al., 2014), and National Financial Capability Study (NFCS) by Financial Industry Regulatory Authority (FINRA)[20], whereas the measurement involving multiple items involves aspects such as level of savings and debt, financial situation, worries related to financial liabilities, and money management (Hayhoe & Wilhelm, 1998; Hira & Mugenda, 1999; Li et al., 2022; Fachrudin et al., 2022). It is, however, worth noting that both methods offer comparable outcomes (Joo & Grable, 2004).

Among the determinants of financial satisfaction, past studies have explored multiple factors that may influence individuals' sense of financial satisfaction; this includes socio-economic and demographic characteristics, psychological factors, personality traits, financial knowledge, and financial behavior. However, inquiry regarding the association

[20]**Accessible at:** https://finrafoundation.org/national-financial-capability-study

of personal attitudes towards GE-EEL and the financial satisfaction of individuals remains largely unexplored in the extant literature.

4.2.2 Gender Egalitarianism in Context of Education, Employment and Leadership (GE-EEL)

Gender egalitarianism refers to the belief and values that in any society, there should not be gender-specific discrimination in the distribution of roles, rights, responsibilities, and opportunities. Gender egalitarianism in terms of education refers to accessing educational opportunities, both in participation and quality, without discrimination. In employment, it refers to the equality in opportunity, pay, working conditions, and career progression. Lastly, in leadership, it refers to unbiased representation in key decision-making roles and the elimination of a glass ceiling.

Extant literature suggests that even though parity is achieved to a large extent in terms of equality in education, the scenario does not reflect the situation in terms of inequality in employment opportunities and leadership positions. As per the recent survey of the International Labor Organization (ILO, 2024), globally, women's participation in the labor force remains relatively low at 48% compared to the 73% of men. However, this gap is particularly significant in developing economies. In this regard, it is noteworthy that the labor force participation of females is equal to or better than that of males in sectors like education, healthcare, and consumer service; however, they are still underrepresented in leadership positions in these sectors. Furthermore, the under-representation of females in the STEM sector significantly hinders their career advancement and wages.

4.2.3 Egalitarian Gender Attitude and the Financial Satisfaction of Individuals

There exist multiple links that relate the financial satisfaction of individuals to the public attitude towards GE-EEL. However, these links are quite nuanced rather than direct.

In the context of education, gender-supportive norms enhance women's ability to participate in the labor market and to secure high-paying jobs, as education provides the means to acquire desirable skill sets for the labor market. It is, however, worthy to note that parity in education does not always translate into equal employment opportunity (OECD, 2017). It is thus essential that public and institutional norms support egalitarian attitudes in the context of labor force participation. Additionally, the educational advancements, specifically the financial literacy, promote shared financial decision-making and improve financial outcomes for households, thus enhancing their financial satisfaction (Banerjee et al., 2022).

In the context of employment, egalitarian employment norms promote households' financial satisfaction, as it conveniently allows the net increase in the household's income via a dual-earner arrangement (Kapelle et al., 2025). Further, it also promotes women's financial satisfaction as the increase in the women's proportion in household income increases their participation and say in the household's financial decision-making (Kulic et al., 2020; Gu et al., 2024).

Finally, in the context of leadership roles, gender-neutral norms bring in diverse perspectives and foster inclusive decision-making, which is linked to improved financial performance of firms and satisfaction of employees (Sahay et al., 2024; Kalbarczyk, 2025). Further, the egalitarian gender norms in the case of political leadership promote sustained improvements in the labor force participation and economic empowerment of women and legal gender equality (Deininger et al., 2020).

4.3 Methodology

4.3.1 Data and Sample

For this study, we relied on the data from the World Value Survey – Wave 7 (WVS-7). WVS-7 is based on a random probability representative sample for sixty-six countries, primarily carried out during 2018-2020. The World Values Survey (WVS) assesses respondents' opinions on various dimensions, including social, political, economic, religious, and cultural values across the participating countries. For the analysis, we focused on sixty-two countries and created the country specific subsamples based on their income levels: low- and lower-middle-income countries (LI-LMI)[21], upper middle income (UMI)[22], and high income (HI)[23].

4.3.2 Variables

Dependent Variable

Financial Satisfaction

WVS-7 assessed financial satisfaction by measuring a respondent's subjective perception of their household's financial situation. This assessment utilized a 10 point Likert-type scale ranging from 1 to 10, where 1 indicated complete dissatisfaction and 10 indicated complete satisfaction.

---

[21] **low and lower middle income countries:** Bangladesh, Bolivia, Egypt, Ethiopia, India, Iran, Jordan, Kenya, Kyrgyzstan, Lebanon, Mongolia, Morocco, Myanmar, Nicaragua, Nigeria, Pakistan, Philippines, Tajikistan, Tunisia, Ukraine, Uzbekistan, Vietnam, Zimbabwe

[22] **upper middle income countries:** Argentina, Armenia, Brazil, China, Colombia, Ecuador, Guatemala, Indonesia, Iraq, Kazakhstan, Libya, Malaysia, Maldives, Mexico, Peru, Russia, Serbia, Thailand, Turkey

[23] **high income countries:** Andorra, Australia, Canada, Chile, Cyprus, Czechia, Germany, Great Britain, Greece, Japan, Netherlands, New Zealand, Northern Ireland, Puerto Rico, Romania, Singapore, Slovakia, South Korea, United States, Uruguay

Independent Variables

Variable of Interest:

Our variable of interest for the current study is individual's attitude towards gender equality in education, employment, and leadership (GE-EEL).

Among the various questionnaires related to social values, attitudes and stereotypes, WVS-7 included few questions that measures respondent's attitudes towards gender equality in terms of education, employment and leadership. These questions are:

1. On the whole, men make better political leaders than women do
2. A university education is more important for a boy than for a girl
3. On the whole, men make better business executives than women do
4. When jobs are scarce, men should have more right to a job than women

Responses for all the above questions (1-4) were measured on a Likert-type scale. By employing exploratory factor analysis, we identified the factor score for each of the indicators and created a composite indicator based on the weighted average of factor scores.

Control Variables

- Socio-economic and demographic factors:

  Extant literature strongly suggest the influence of socioeconomic and demographic characteristics on household's satisfaction with their financial situation. Considering the same, we included gender, age, education level, income level as control variables in our study.

- Societal factors:

  It has been observed in literature (Asadullah & Chaudhury, 2012; Niimi, 2018; Utz & Maaß, 2018) that the relative financial or living status influences one's state of satisfaction with their finances. To account for such influence in our analysis, we included a variable measuring the respondent's living standard relative to their parents. The variable measured the relative living standard as worse off, similar, or better off.

- Country specific factors:

  Extant literature also suggests the potential influence of country-specific characteristics (Bjørnskov et al., 2007; Havasi, 2011; Kaya, 2013) on a household's satisfaction with their financial condition. To control for the country-level heterogeneity, we included country as an additional control variable. We did not include country-specific variables individually, as it was not within the objective of the current study.

Table 4.1: Summary Statistics

		Income based country groups		
		LI-LMI	**UMI**	**HI**
Gender	Female	50.7	53.2	53.3
	Male	49.3	46.8	46.7
Relative living standard:	Worse off	21.9	14.7	15.7
	About the same	24.2	29.6	28.7
	Better off	53.9	55.7	55.5
Age	16-32	41.9	33.7	21.1
	33-48	33.5	33.8	28.3
	49-65	19.6	25.6	30.9
	66-100	5.0	6.9	19.7
Education	**Lower** (early childhood education or no education to lower secondary)	38.2	39.2	16.8
	Middle (upper secondary to post-secondary or non-tertiary education)	34.5	32.7	38.3
	Higher (short cycle tertiary to doctoral or equivalent)	27.2	28.1	44.9
Income	**Low** (score 1-3 on scale of 1-10)	25.6	27.6	18.7
	Middle (score 4-7 on scale of 1-10)	64.5	62.8	68.6
	High (score 8-10 on scale of 1-10)	10.0	9.7	12.7
Occupation	Unemployed	11.3	7.3	5.1
	Student	8.1	5.5	4.1
	Housewife	18.2	15.6	7.1
	Retired or pensioner	5.6	8.8	22.3
	Self-Employed	21.6	16.6	6.1
	Part-Time	8.9	8.1	8.9
	Full-Time	26.3	38.1	46.4

(continued on next page)

Table 4.1: (continued)

		Income based country groups		
		LI-LMI	**UMI**	**HI**
Relationship Status	Married	61.3	56.5	52.6
	Living together	5.7	8.3	10.0
	Divorced	2.2	3.9	7.1
	Separated	1.5	2.7	2.3
	Widowed	4.6	5.6	6.2
	Single	24.7	23.0	21.8
Location	Rural	47.9	36.4	17.5
	Urban	52.1	63.6	82.5
GE-EEL_1 (Median, Range 1-4)	On the whole, men make better political leaders than women do	3	3	3
GE-EEL_2 (Median, Range 1-4)	A university education is more important for a boy than for a girl	3	3	3
GE-EEL_3 (Median, Range 1-4)	On the whole, men make better business executives than women do	3	3	3
GE-EEL_4 (Median, Range 1-5)	When jobs are scarce, men should have more right to a job than women	3	3	3
FS (Median, Range 1-10)		6	6	6
Countries		23	19	20
Observations		28179	26923	25636

LI-LMI: low- and lower-middle-income countries**; UMI:** upper-middle income countries; **HI**: high-income countries

4.3.3 Empirical Analysis

Model Specification

In this study, as our dependent variable, financial satisfaction was measured on a 10-point Likert-type scale; we considered it a continuous variable, as the statistical characteristics of a Likert-type scale with 5 or more points are comparable to those of continuous variables (Huh & Gim, 2025). Consequently, we estimated the following linear regression model:

$$\mathbf{FS_{ij}} = \boldsymbol{\alpha} + \boldsymbol{\beta}\mathbf{X_{ij}} + \boldsymbol{\gamma}\mathbf{Y_{ij}} + \boldsymbol{\delta_j} + \boldsymbol{\varepsilon_{ij}} \qquad (1)$$

Here, FS_{ij} represents outcome variables financial satisfaction, for an individual "i" from country "j". X_{ij} represents the attitude towards GE-EEL of an respondent "i" from country "j". Y_{ij} is the vector of control variables (includes socio-economic and demographic characteristics) for an respondent "i" from country "j". δ_j refers to the country dummies, introduced to control for the cross country heterogeneity. ε_{ij} refers to the normally distributed error terms. All the continuous variables were standardized before being employed for the analysis.

Further Analysis

To explore further, particularly the gender-specific influence of the attitude towards GE-EEL on the respondent's financial satisfaction, we created gender-based subsamples for all three groups. The empirical model for the analysis remains the same as described in equation (1).

4.4 Results and Discussion

Tables 4.2 (model 2d), 4.3 (model 3d), and 4.4 (model 4d) report the results of the aforementioned empirical model for the LI-LMI, UMI, and HI countries, respectively.

We observed that the key variable of interest in our study, i.e., the respondent's attitude toward GE-EEL, has a negative association with financial satisfaction in the case of LI-LMI countries; the relationship remained negative but of smaller magnitude in the case of UMI countries and turned positive in the case of HI countries. The relationship was statistically significant in all three cases, while we controlled for the across-country heterogeneity. The contrasting relationship of GE-EEL with the financial satisfaction in LI-LMI and UMI with the HI countries is likely due to the difference in the societal and institutional context across different types of economies. An egalitarian society appropriately promotes equality in economic opportunities and household responsibilities. However, inegalitarian societies lack such characteristics, which may promote value incongruence and negatively affect subjective well-being (Sagiv & Schwartz, 2021). Here, it is pertinent to note that LI-LMI and UMI countries lag considerably behind HI countries in terms of prevalent egalitarian gender norms; thus, the outcome seems reasonable.

Further, it was found that the financial satisfaction of males wasn't significantly different from that of females in the case of all three country types. As far as the extant literature is concerned, it presents mixed evidence related to the influence of gender on financial satisfaction. In the context of cross-country studies, our results are consistent with those observed by Stack & Eshleman (1998) and Bruni & Stanca (2006). However, a broader examination of extant literature (Schnepf, 2010; Trung et al., 2013; Xiao et al., 2014; Xiao & O'Neill, 2018; Handy & Sealey, 2022), specifically in the case of country-level studies, suggests the existence of mixed evidence.

Regarding the influence of age, compared to the reference age group, i.e., 16-32 years, the age group 33-48 is relatively less satisfied for all three types of countries. Age group 49-65 was less satisfied for LI-LMI and UMI, but not in the case of HI countries. And the age group > 65 was more satisfied for UMI and HI countries, but there was no significant difference in the case of LI-LMI countries. Existing literature broadly concurs with this outcome. Evidence from literature (Xiao et al., 2014; Handy & Sealey, 2022) suggests that financial satisfaction is usually lower in middle-aged people, which improves in the later years of one's life as the financial responsibilities and liabilities reduce with the later years of one's life.

In the case of education and income levels, higher levels relate positively to the financial satisfaction of the household. This seems intuitively reasonable and was consistent with the evidence of Trung et al., 2013; Handy & Sealey, 2022; and Lee et al., 2023. Further, in the case of employment type, compared to the unemployed ones, the most financially satisfied were the full-time workers, pensioners or retired individuals, and students, for all three groups. Similar results were observed in the case of Stack & Eshleman (1998) and Handy & Sealey (2022).

Further, regarding the influence of marital status, compared to the reference category, i.e., married, all others were found to be less satisfied with their financial situation, particularly the separated ones, for all three country groups. Multiple studies (Stack & Eshleman, 1998; Fan and Babiarz, 2019; Handy & Sealey, 2022; Lee et al., 2023) confirm that married individuals are financially more satisfied. Additionally, location-wise, those residing in urban centers were less satisfied compared to those from rural areas in all three groups.

Further Analysis

Furthermore, as we segregated the samples by gender, we observed (check table 4.5) that in the case of LI-LMI countries, both the female-only and male-only samples showed a significant negative association between the respondent's attitude towards GE-EEL and the household's financial satisfaction. In the case of UMI countries, the association was significant for the female-only sample and non-significant for the male-only sample. In the case of HI countries, the association was non-significant for the female-only sample, whereas a significant positive association was observed in the male-only sample.

As discussed earlier, LI-LMI economies lag behind UMI and HI economies in terms of institutional interventions to promote fair economic opportunities and social mobility, as well as the alleviation of inequality in different aspects of life. This situation is likely to exacerbate value incongruence and pessimism for those with egalitarian values, negatively affecting their subjective well-being, including their subjective financial well-being. The social and institutional context is relatively better in UMI economies, which likely explains why males with a higher degree of egalitarian norms do not differ significantly from other males. However, the negative association in the case of females could be due to multiple reasons: poor work-life balance due to socio-cultural and family norms (Akanji et al., 2020; Uddin, 2021; ILO, 2022), lack of work-family support (Zumbyte, 2024), stereotyping and gender bias (Diehl et al. 2020; Heilman et al., 2024) at the workplace, and higher levels of value incongruence as females are relatively more egalitarian (Sani & Quaranta, 2017).

Finally, in the context of HI economies, the prevalence of economic opportunities, favourable social context, and institutional support to incentivize egalitarian practices (Lyness & Kropf, 2005; Seierstad & Kirton, 2015) appears to be the reason for the indifference in the association between egalitarian attitudes and the financial satisfaction

of women. Also, the positive association between egalitarian attitudes and financial satisfaction in the case of the male population in the HI economies is likely due to a higher likelihood of dual-earner arrangements, diversification of household income, and institutional support for household responsibility (Kitterød & Lappegård, 2012; De Laat, 2025).

Table 4.2: Financial satisfaction – LI LMI countries

	2a			2b			2c			2d		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
GE-EEL							-0.076	0.007	***	-0.023	0.007	**
Relative living standard: Similar				0.457	0.017	***	0.460	0.017	***	0.297	0.017	***
Relative living standard: Better				0.548	0.015	***	0.545	0.015	***	0.403	0.015	***
Gender: Male	0.002	0.013		0.013	0.013		-0.011	0.013		-0.002	0.012	
Age: 33-48	-0.084	0.015	***	-0.070	0.015	***	-0.070	0.015	***	-0.075	0.014	***
Age: 48-65	-0.065	0.018	***	-0.058	0.018	**	-0.058	0.018	***	-0.066	0.017	***
Age: >65	-0.068	0.033	*	-0.065	0.032	*	-0.061	0.032	.	-0.016	0.031	
Education: Secondary	-0.006	0.014		-0.008	0.014		-0.003	0.014		-0.015	0.014	
Education: Bachelor's and above	0.067	0.015	***	0.049	0.015	**	0.066	0.015	***	0.033	0.016	*
Income: Middle income	0.444	0.015	***	0.381	0.015	***	0.385	0.015	***	0.347	0.014	***
Income: High income	0.911	0.022	***	0.830	0.021	***	0.827	0.021	***	0.750	0.021	***
Occupation: Student	0.284	0.028	***	0.240	0.027	***	0.245	0.027	***	0.175	0.026	***
Occupation: Housewife	0.237	0.025	***	0.222	0.024	***	0.210	0.024	***	0.126	0.023	***
Occupation: Retired/Pensioner	0.225	0.034	***	0.190	0.033	***	0.183	0.033	***	0.117	0.032	***
Occupation: Self Employed	0.158	0.023	***	0.132	0.022	***	0.134	0.022	***	0.119	0.022	***
Occupation: Part Time	0.222	0.027	***	0.197	0.026	***	0.186	0.026	***	0.078	0.025	**
Occupation: Full Time	0.257	0.022	***	0.224	0.021	***	0.219	0.021	***	0.132	0.021	***
Relationship Status: Living Together	0.007	0.024		-0.008	0.023		0.019	0.024		-0.107	0.025	***
Relationship Status: Divorced	-0.210	0.040	***	-0.158	0.038	***	-0.152	0.038	***	-0.125	0.037	***
Relationship Status: Separated	-0.237	0.048	***	-0.196	0.046	***	-0.181	0.046	***	-0.179	0.045	***
Relationship Status: Widow	-0.158	0.031	***	-0.120	0.030	***	-0.117	0.030	***	-0.098	0.028	***
Relationship Status: Single	-0.054	0.018	**	-0.054	0.017	**	-0.043	0.017	*	-0.007	0.017	
Location: Urban	-0.137	0.012	***	-0.114	0.011	***	-0.101	0.011	***	-0.035	0.012	**
Country Fixed effects	No			No			No			Yes		
Intercept	-0.446	0.027	***	-0.800	0.027	***	-0.798	0.027	***	-0.393	0.035	***
R-Squared	0.092			0.139			0.143			0.232		
Observation	28179			28179			28179			28179		

Gender: "Female" is used as a reference category; **Age:** "16-32" is used as reference category; **Education:** "Primary or less" is used as a reference category for the education level; **Income:** "Low Income" is used as a reference category for income level; **Occupation:** "Unemployed" is used as a reference category, **Relationship Status:** "Married" is used as a reference category; **Location:** "Rural" is used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 4.3: Financial satisfaction – UMI countries

	3a			3b			3c			3d		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
GE-EEL							0.020	0.007	**	-0.018	0.008	*
Relative living standard: Similar				0.352	0.018	***	0.352	0.018	***	0.262	0.018	***
Relative living standard: Better				0.622	0.017	***	0.621	0.017	***	0.490	0.017	***
Gender: Male	-0.012	0.013		0.000	0.012		0.006	0.013		-0.009	0.012	
Age: 33-48	-0.060	0.016	***	-0.045	0.015	**	-0.045	0.015	**	-0.046	0.015	**
Age: 48-65	-0.030	0.018	.	-0.022	0.018		-0.023	0.018		-0.030	0.018	.
Age: >65	0.158	0.033	***	0.142	0.032	***	0.141	0.032	***	0.095	0.032	**
Education: Secondary	0.025	0.015	.	0.032	0.014	*	0.027	0.014	.	0.042	0.015	**
Education: Bachelor's and above	0.029	0.015	.	0.041	0.015	**	0.036	0.015	*	0.112	0.016	***
Income: Middle income	0.440	0.015	***	0.409	0.015	***	0.409	0.015	***	0.443	0.014	***
Income: High income	0.966	0.022	***	0.896	0.022	***	0.896	0.022	***	0.905	0.023	***
Occupation: Student	0.288	0.033	***	0.221	0.032	***	0.220	0.032	***	0.200	0.032	***
Occupation: Housewife	0.177	0.029	***	0.155	0.028	***	0.157	0.028	***	0.139	0.028	***
Occupation: Retired/Pensioner	0.077	0.034	*	0.042	0.033		0.043	0.033		0.116	0.033	***
Occupation: Self Employed	0.251	0.028	***	0.202	0.027	***	0.202	0.027	***	0.144	0.028	***
Occupation: Part Time	0.199	0.031	***	0.160	0.031	***	0.162	0.031	***	0.106	0.030	***
Occupation: Full Time	0.231	0.025	***	0.177	0.025	***	0.177	0.025	***	0.147	0.025	***
Relationship Status: Living Together	0.052	0.023	*	0.089	0.023	***	0.081	0.023	***	-0.018	0.024	
Relationship Status: Divorced	-0.095	0.031	**	-0.064	0.030	*	-0.065	0.030	*	-0.043	0.030	
Relationship Status: Separated	-0.063	0.039		-0.007	0.039		-0.013	0.039		-0.093	0.039	*
Relationship Status: Widow	-0.145	0.031	***	-0.108	0.030	***	-0.108	0.030	***	-0.077	0.029	**
Relationship Status: Single	-0.006	0.017		0.016	0.017		0.012	0.017		-0.013	0.017	
Location: Urban	-0.063	0.013	***	-0.030	0.012	*	-0.034	0.012	**	-0.020	0.013	
Intercept	-0.497	0.031	***	-0.931	0.033	***	-0.928	0.033	***	-0.846	0.048	***
Country Fixed effects	No			No			No			Yes		
R-Squared	0.090			0.138			0.138			0.173		
Observation	26923			26923			26923			26923		

Gender: "Female" is used as a reference category; **Age:** "16-32" is used as reference category; **Education:** "Primary or less" is used as a reference category for the education level; **Income:** "Low Income" is used as a reference category for income level; **Occupation:** "Unemployed" is used as a reference category, **Relationship Status:** "Married" is used as a reference category; **Location:** "Rural" is used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 4.4: Financial satisfaction – HI countries

	4a			4b			4c			4d		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
GE-EEL							0.082	0.008	***	0.015	0.009	.
Relative living standard: Similar				0.507	0.019	***	0.506	0.019	***	0.462	0.019	***
Relative living standard: Better				0.685	0.018	***	0.686	0.018	***	0.671	0.018	***
Gender: Male	-0.030	0.012	*	-0.031	0.012	**	-0.004	0.012		-0.012	0.012	
Age: 33-48	-0.043	0.018	*	-0.021	0.017		-0.024	0.017		-0.037	0.017	*
Age: 48-65	0.075	0.019	***	0.077	0.018	***	0.075	0.018	***	0.048	0.018	**
Age: >65	0.261	0.027	***	0.220	0.027	***	0.219	0.027	***	0.182	0.027	***
Education: Secondary	0.070	0.018	***	0.071	0.018	***	0.054	0.018	**	0.067	0.018	***
Education: Bachelor's and above	0.190	0.018	***	0.185	0.018	***	0.154	0.018	***	0.156	0.018	***
Income: Middle income	0.628	0.018	***	0.544	0.017	***	0.542	0.017	***	0.533	0.017	***
Income: High income	1.169	0.022	***	1.045	0.021	***	1.034	0.022	***	0.970	0.022	***
Occupation: Student	0.480	0.042	***	0.380	0.041	***	0.369	0.041	***	0.363	0.041	***
Occupation: Housewife	0.361	0.038	***	0.293	0.037	***	0.306	0.037	***	0.306	0.037	***
Occupation: Retired/Pensioner	0.548	0.037	***	0.461	0.035	***	0.455	0.035	***	0.418	0.035	***
Occupation: Self Employed	0.393	0.038	***	0.329	0.036	***	0.328	0.036	***	0.333	0.036	***
Occupation: Part Time	0.392	0.036	***	0.337	0.035	***	0.331	0.035	***	0.287	0.035	***
Occupation: Full Time	0.378	0.031	***	0.313	0.030	***	0.314	0.030	***	0.304	0.030	***
Relationship Status: Living Together	-0.027	0.020		0.021	0.019		0.001	0.019		-0.073	0.019	***
Relationship Status: Divorced	-0.234	0.024	***	-0.167	0.024	***	-0.175	0.024	***	-0.197	0.024	***
Relationship Status: Separated	-0.268	0.040	***	-0.181	0.038	***	-0.192	0.038	***	-0.236	0.039	***
Relationship Status: Widow	-0.130	0.029	***	-0.098	0.028	***	-0.089	0.028	**	-0.083	0.027	**
Relationship Status: Single	-0.088	0.017	***	-0.046	0.017	**	-0.055	0.017	***	-0.079	0.017	***
Location: Urban	0.014	0.015		0.007	0.015		0.008	0.015		-0.016	0.015	
Intercept	-1.089	0.041	***	-1.487	0.040	***	-1.481	0.040	***	-1.245	0.049	***
Country Fixed effects	No			No			No			Yes		
R-Squared	0.1691			0.224			0.228			0.255		
Observation	25636			25636			25636			25636		

Gender: "Female" is used as a reference category; **Age:** "16-32" is used as reference category; **Education:** "Primary or less" is used as a reference category for the education level; **Income:** "Low Income" is used as a reference category for income level; **Occupation:** "Unemployed" is used as a reference category, **Relationship Status:** "Married" is used as a reference category; **Location:** "Rural" is used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; ***** $p < 0.05$; ****** $p < 0.01$; *******$p < 0.001$

Table 4.5: Financial satisfaction – gender based subsamples for LI-LMI, UMI, and HI countries

	LI-LMI Countries				UMI Countries				HI Countries			
	5a		5b		5c		5d		6e		6f	
	β	SE	β	SE	β	SE	β	SE	β	SE	β	SE
GE-EEL	-0.022	0.010 *	-0.022	0.010 *	-0.026	0.011 *	-0.008	0.011	0.006	0.013	0.029	0.012 *
Relative living standard: Similar	0.332	0.024 ***	0.259	0.024 ***	0.263	0.025 ***	0.261	0.026 ***	0.482	0.026 ***	0.431	0.028 ***
Relative living standard: Better	0.417	0.021 ***	0.384	0.021 ***	0.499	0.024 ***	0.479	0.025 ***	0.687	0.024 ***	0.647	0.026 ***
Gender	**Female**		**Male**		**Female**		**Male**		**Female**		**Male**	
Age: 33-48	-0.079	0.019 ***	-0.068	0.021 **	-0.039	0.021 .	-0.050	0.023 *	-0.021	0.023	-0.067	0.026 **
Age: 48-65	-0.065	0.024 **	-0.059	0.025 *	-0.018	0.024	-0.034	0.026	0.081	0.025 **	0.002	0.027
Age: >65	-0.016	0.046	-0.001	0.043	0.101	0.046 *	0.100	0.045 *	0.244	0.038 ***	0.116	0.038 **
Education: Secondary	-0.036	0.020 .	0.009	0.020	0.055	0.021 **	0.027	0.021	0.067	0.025 **	0.068	0.026 **
Education: Bachelor's and above	0.017	0.023	0.056	0.022 **	0.137	0.023 ***	0.087	0.022 ***	0.173	0.025 ***	0.142	0.026 ***
Income: Middle income	0.366	0.020 ***	0.324	0.020 ***	0.449	0.020 ***	0.431	0.021 ***	0.516	0.023 ***	0.544	0.026 ***
Income: High income	0.789	0.030 ***	0.704	0.030 ***	0.881	0.031 ***	0.921	0.033 ***	0.965	0.030 ***	0.971	0.032 ***
Occupation: Student	0.138	0.039 ***	0.214	0.036 ***	0.202	0.048 ***	0.196	0.043 ***	0.327	0.055 ***	0.418	0.061 ***
Occupation: Housewife	0.113	0.031 ***	0.072	0.099	0.105	0.039 **	0.190	0.094 *	0.233	0.047 ***	0.296	0.107 **
Occupation: Retired/Pensioner	0.081	0.049	0.145	0.042 ***	0.081	0.049	0.145	0.044 **	0.335	0.049 ***	0.513	0.050 ***
Occupation: Self Employed	0.089	0.034 **	0.149	0.028 ***	0.092	0.043 *	0.188	0.036 ***	0.275	0.051 ***	0.409	0.051 ***
Occupation: Part Time	0.073	0.039 .	0.094	0.033 **	0.057	0.045	0.152	0.042 ***	0.227	0.046 ***	0.326	0.056 ***
Occupation: Full Time	0.103	0.032 **	0.156	0.028 ***	0.115	0.038 **	0.179	0.033 ***	0.246	0.042 ***	0.379	0.044 ***
Relationship Status: Living Together	-0.120	0.034 ***	-0.094	0.037 *	0.003	0.033	-0.040	0.036	-0.087	0.027 **	-0.059	0.028 *
Relationship Status: Divorced	-0.128	0.044 **	-0.126	0.071 .	-0.062	0.037 .	-0.015	0.053	-0.236	0.031 ***	-0.155	0.037 ***
Relationship Status: Separated	-0.164	0.059 **	-0.203	0.070 **	-0.092	0.050 .	-0.087	0.063	-0.266	0.053 ***	-0.208	0.057 ***
Relationship Status: Widow	-0.107	0.033 **	-0.078	0.064	-0.083	0.036 *	-0.065	0.056	-0.125	0.033 ***	-0.038	0.048
Relationship Status: Single	-0.017	0.025	0.009	0.023	-0.028	0.025	-0.001	0.024	-0.134	0.023 ***	-0.032	0.024
Location: Urban	-0.018	0.017	-0.052	0.017 **	-0.024	0.017	-0.015	0.018	0.011	0.021	-0.047	0.022 *
Intercept	-0.404	0.050 ***	-0.394	0.048 ***	-0.814	0.069 ***	-0.886	0.067 ***	-1.258	0.068 ***	-1.235	0.069 ***
Country Fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
R-Squared	0.229		0.236		0.175		0.173		0.251		0.264	
Observation	13897		14282		14318		12605		13662		11974	

Gender: Reference category not applicable; **Age:** "16-32" is used as reference category; **Education:** "Primary or less" is used as a reference category for the education level; **Income:** "Low Income" is used as a reference category for income level; **Occupation:** "Unemployed" is used as a reference category, **Relationship Status:** "Married" is used as a reference category; **Location:** "Rural" is used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; ***** $p < 0.05$; ****** $p < 0.01$; *******$p < 0.001$

4.5 Conclusion

As discussed in the literature review section, various antecedents of financial satisfaction explored in the extant literature primarily include, socio-economic and demographic factors, social factors such as financial socialization, relative social status, psychological factors include, personality traits, and financial knowledge and behavior. However, the extant literature lacks the evidence related to the influence of attitudinal factors of individuals, particularly the attitude towards the gender equality in education, employment, and leadership. Current research, attempts to overcome the said gap utilizing a cross country data sub grouped based on per-capita national income.

Our findings indicate that GE-EEL relates differently to financial satisfaction, depending on the national income-based subgroups of countries. We observed that the association was negative in case of LI-LMI countries, as well as the UMI, and positive in case of UI countries. Further, in case of socio-economic and demographic control variables, the observed association was consistent with the extant literature suggesting reliability of our results.

The findings of this study advance the scholarship on household financial satisfaction in the context of cross-country studies for different income-group countries and lay out insights for policy interventions. The findings underscore the relevance of social context and the importance of institutional interventions in ensuring equity in education, employment, and leadership roles. More specifically, the need of the hour seems to be the policy interventions to facilitate and incentivize equal participation in both professional and personal spheres, a scenario wherein both males and females could maintain a balance in their personal and professional lives to improve their sense of financial satisfaction, particularly in the case of LI-LMI and UMI countries.

Apart from the contributions made to the extant literature, there exist some limitations to the current research. First, we have observed only the association, and did not made the causal estimates. The part of the WVS-7 was carried out during COVID-19, which might have a negative influence on some respondents' subjective assessment of their satisfaction with their financial situation. We have not included factors like personality traits, psychological factors, and financial knowledge and behavior, as the same were not available in the survey.

Conclusion

In the twenty-first century, there have been several large-scale economic shocks that have led to an increase in global income inequality. This has further led to an increase in financial distress among vulnerable households across the world. These shocks include the global economic recession of 2008-2009 and the COVID-19 pandemic as well as regional disruptions such as the Ukraine-Russia conflict and political instability in the Middle East and North African region. There have also been widespread concerns related to job losses due to technological advances and offshoring of jobs to low-cost countries.

In the backdrop of such economically challenging times, it is imperative to understand the factors that make households more resilient and less prone to financial worry. In this thesis, we present four studies that look at the issues of household financial wellbeing from the individual, institutional, socio-cultural, and attitudinal perspectives. We look at the dimensions of financial worry related to the household's day-to-day financial ac--tivities. Financial resilience, on the other hand, is linked specifically to income or economic shocks and aims to understand the factors that enable households to deal with sudden emergencies.

Study – 1 :

In the first study, we were interested in understanding how individual households cope with sudden economic emergencies: whether they relied on their regular income, utilized personal savings, borrowed from family and friends, took loans from formal and informal institutions, or had to monetize their assets. We investigated how these coping strategies were related to self-reported financial worry and financial resilience.

We utilized household-level data for ≈17000 households across 14 countries from the Global FINDEX database, 2021. Several regression models were built that were cross-validated using different subsamples from the data. The results indicate that individuals who are able to rely on their personal savings and their regular income reported the highest level of financial resilience and the lowest level of financial worry. We found that those dependent on family and friends, formal financial institutions, and private lenders all reported low levels of financial resilience and financial worry. The unexpected insight that we gained from this study was that borrowing from banks and formal institutions was not a preferred coping strategy and led to higher levels of financial worry, possibly due to the interest burden associated with such loans.

In terms of policy implications, the results of this study indicate that having access to savings is the most important way to ensure higher levels of financial resilience and lower levels of financial worry. Mere expansion of financial inclusion might not increase financial resilience. Policy interventions that promote household savings and convenient borrowing schemes with lower levels of interest may be useful to improve the financial resilience of vulnerable households in case of financial exigencies.

Study – 2:

In the previous chapter, we considered the coping strategies adopted by households when faced with a financial shock. We found that having a bank account, by itself, does not significantly improve financial resilience. Several countries have, in recent times, adopted policies aimed at higher levels of financial inclusion. One of the justifications for such policies is that increasing the access to the formal financial sector that is better regulated may protect individuals from unfair practices and discriminatory interest rates imposed in the informal sector. However, there has been limited success in these efforts due to the

supply-side barriers, such as lack of bank infrastructure, as well as demand-side barriers, such as lack of knowledge and distrust amongst rural and poorer communities. The recent introduction of technology that facilitates digital payments and the introduction of mobile wallet schemes have led to higher levels of digital financial inclusion.

In this chapter, we aim to study the relative impact of traditional financial inclusion and digital financial inclusion in improving the financial resilience amongst households.

We utilized household-level data for roughly 34000 households across thirteen countries from the Global FINDEX database at two different time periods: 2014 and 2021. Entity and time fixed effect models were built using the short panel data. We found that having savings in bank accounts had the largest impact on financial resilience, followed by traditional payments and digital payments and, to a smaller extent, digital borrowing.

Findings of this chapter underscore the relevance of DFI in achieving FI for the unbanked population and the provisioning of borrowing catered specifically for the vulnerable population. It is important to have appropriate infrastructure to support digital systems; policy interventions are required to promote financial and digital financial literacy and devise mechanisms to prevent fraud, which will reduce the perceptions of risk.

It is interesting to note that the findings of Chapter 2 are similar to those of Chapter 1. Merely having a bank account (that is traditional financial inclusion) has a smaller impact on financial resilience than having savings. In terms of digital financial inclusion, the ability to make payments (which indicates a higher level of disposable income and higher financial control) is associated with higher levels of financial resilience. Thus, economic resources are most important in determining the resilience of households.

Study – 3:

In the first two studies of this thesis, we were primarily interested in the impact of household-level factors such as economic resources, social capital, traditional financial inclusion, and digital financial inclusion on the financial resilience and financial worry of individuals. These factors look at financial resilience and worry at a more granular level of the household and have an impact on the inter-household heterogeneity within a country.

However, when including countries as a control variable, we did observe some heterogeneity in terms of the average levels of financial resilience and worry across countries. Extant literature carries multiple pieces of evidence regarding the influence of national culture on financial behavior, decision-making, and other associated constructs that might influence the financial well-being of households. However, there are few studies that consider the role of national culture on the perceived financial resilience and the financial worries of the households. In this chapter, we address this gap in the literature by including cultural factors at a national level within our models to understand whether certain cultural dimensions are associated with reported levels of financial resilience and worry.

Utilizing the Global Findex Database (2021) and the cultural dimensions proposed by Hofstede et al. (2010) for the sixty-two major economies across the globe, we explored the association of national culture with the financial resilience and the financial worries of households by employing a multilevel regression approach. The results indicate that there are indeed differences in both of these factors that depend on national culture. In particular, we observed a significant positive association of financial resilience with individualism and long-term orientation. In the case of financial worry, the association

was significantly positive for power distance and masculinity, while it was negative for individualism and long-term orientation.

Findings of this study provide insights into the impact of national culture on individual financial outcomes that may inform policy interventions. Countries that are high in individualism may employ more laissez-faire policies while creating a support net for the extremely vulnerable households. In more collectivistic cultures, social norms and community leaders may be needed to guide the behavior of individual households. In case of low long-term orientation and high masculinity, interventions to promote a prudent financial attitude are likely to be helpful. In countries with high power distance, more democratic and transparent financial rules may reduce financial worry.

Study – 4:

In each of the first three studies, we did not consider gender attitudes as a key explanatory variable. While the gender of the respondent was included as a control variable, we did not focus on the role of gender egalitarian attitudes in the financial outcomes of households. Participation of women in the workplace has increased significantly in many parts of the world compared to twenty years back. However, attitudes towards women's participation in the labor force still vary widely across national and socio-economic strata. While Western and more developed nations report more equal participation of both genders in the workforce, structural and cultural barriers prevent greater participation of women in less developed and conservative countries.

There are no extant studies that have looked at the impact of an egalitarian attitude towards women's participation on the financial satisfaction of individual households. To address this gap, we explore the role of a gender egalitarian attitude on the financial

satisfaction of both men and women across different levels of socio-economic development within the country.

We use cross-country data from the World Value Survey (Wave 7). Specifically, the study explored how the attitude towards gender equality in education, employment, and leadership (GE-EEL) may influence the financial satisfaction of households. It was observed that the association of GE-EEL with the financial satisfaction of individuals varied with the country-specific context. Specifically, we observed that the association was negative in the case of LI-LMI countries, as well as the UMI, and positive in the case of HI countries. These findings point to the fact that while equal participation of women in the workforce may be a desirable outcome at a social level, it may not result in greater levels of financial satisfaction in all cases. Without proper economic opportunities, having a more gender-egalitarian attitude may result in greater friction between desired and actual outcomes. Women who may want to work but are prevented or not supported from doing so due to societal biases report lower financial satisfaction. In high-income countries, a more egalitarian attitude towards women's participation led to higher levels of financial satisfaction among men since it would enable them some freedom from the burden of being the sole earner in the family.

Limitations:

Amid the contributions made, there exist some limitations as well to this study. First, the self-assessment-based responses are often associated with the subjectivity bias, leading to over- or underestimation. In this context it is important to account for the fact that the Global Findex (2021) and a part of WVS–W7 were carried out during the COVID-19 pandemic phase, and the same could have an influence on respondents' self-assessments. Second, we were unable to account for the influence of factors known to influence

respondents' financial behavior and decision-making, such as personality, attitude toward money, financial knowledge, and capability, as the same was not measured in the case of Global Findex (2014, 2021) and WVS – W7. Future studies should attempt to include all such factors. Third, this thesis employs only the single measure of financial resilience, worry, and satisfaction; future studies should try to include alternate measures as well in the same study. This would help establish the robustness of findings. Fourth, we have primarily explored associations and not causation. Although the second study has attempted to explore the causal link by employing the instrumental variable approach, we were not able to do so in other studies. Finally, in study 2, we did not have access to true panel data in terms of the same individuals being surveyed year over year; this prevented us from observing the life-stage issues for resilience.

References:

Abadie, A. (2003). Semiparametric instrumental variable estimation of treatment response models. *Journal of Econometrics*, 113(2), pp. 231–263. https://doi.org/10.1016/s0304-4076(02)00201-4

Afjal, M. (2023). Bridging the financial divide: a bibliometric analysis on the role of digital financial services within FinTech in enhancing financial inclusion and economic development. *Humanities and Social Sciences Communications*, 10(1), pp. 1-27. https://doi.org/10.1057/s41599-023-02086-y

Agarwalla, S. K., Barua, S. K., Jacob, J., & Varma, J. R. (2015). Financial literacy among working young in urban India. *World Development*, 67, pp. 101-109. https://doi.org/10.1016/j.worlddev.2014.10.004

Ahmad, A. H., Green, C., & Jiang, F. (2020). Mobile money, financial inclusion and development: A review with reference to African experience. *Journal of Economic Surveys*, 34(4), pp. 753-792. https://doi.org/10.1111/joes.12372

Ahunov, M., & Van Hove, L. (2020). National culture and financial literacy: international evidence. *Applied Economics*, 52(21), pp. 2261-2279. https://doi.org/10.1080/00036846.2019.1688241

Akanfe, O. A (2022). *Advancing digital financial inclusion: Data privacy, regulatory compliance, and cross-country cultural values in digital payment systems use*, Ph.D. Thesis, The University of Texas at San Antonio. https://www.proquest.com/docview/2703432625?%20Theses&fromopenview=true&pq-origsite=gscholar&sourcetype=Dissertations%20

Akanji, B., Mordi, C., & Ajonbadi, H. A. (2020). The experiences of work-life balance, stress, and coping lifestyles of female professionals: *Insights from a developing country*. Employee Relations, 42(4), pp. 999–1015. https://doi.org/10.1108/ER-01-2019-0089

Alhassan, A., Li, L., Reddy, K., & Duppati, G. (2019). The impact of formal financial inclusion on informal financial intermediation and cash preference: evidence from Africa. *Applied Economics*, 51(42), pp. 4597–4614. https://doi.org/10.1080/00036846.2019.1593316

Aliber, M. (2015). The importance of informal finance in promoting decent work among informal operators: A comparative study of Uganda and India. *International Labour Office, Social Finance Programme–Geneva: ILO*, Social Finance Working Paper, 66, pp. 1-60. https://researchrepository.ilo.org/esploro/outputs/995321135202676 (accessed January 11, 2025)

Alshamsan, R., Leslie, H., Majeed, A., & Kruk, M. (2017). Financial hardship on the path to Universal Health Coverage in the Gulf States. *Health Policy*, 121(3), pp. 315–320. https://doi.org/10.1016/j.healthpol.2016.12.012

Alwahidin, N., Jufra, A., Mulu, B., & Sari, K. N. (2023). A new economic perspective: Understanding the impact of digital financial inclusion on Indonesian households consumption. *Bulletin of Monetary Economics and Banking*, 26(2), pp. 333-360. https://doi.org/10.59091/1410-8046.2070

Ang, J. (2009). Household saving behaviour in an extended life cycle model: A comparative study of China and India. *Journal of Development Studies*, 45(8), pp. 1344-1359. https://doi.org/10.1080/00220380902935840

Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton University Press.

Anzoategui, D., Demirgüç-Kunt, A., & Pería, M. S. M. (2013). Remittances and Financial Inclusion: Evidence from El Salvador. *World Development*, 54, pp. 338–349. https://doi.org/10.1016/j.worlddev.2013.10.006

Arellano, A., Cámara, N., & Desmet, N. (2019). Financial Resilience of Brazilian Households. Financial Health Resilience, pp. 1-8. https://www.bbvaresearch.com/wp-content/uploads/2019/01/FinancialHealthResilience.pdf (accessed January 11, 2025)

Asadullah, M. N., & Chaudhury, N. (2012). Subjective well-being and relative poverty in rural Bangladesh. *Journal of Economic Psychology*, 33(5), pp. 940–950. https://doi.org/10.1016/j.joep.2012.05.003

Ashraf, N., Karlan, D. S., & Yin, W. (2010). Female Empowerment: impact of a commitment savings product in the Philippines. *World Development*, *38*(3), pp. 333–344. https://doi.org/10.1016/j.worlddev.2009.05.010

Atkinson, J., De Janvry, A., McIntosh, C., & Sadoulet, E. (2013). Prompting Microfinance Borrowers to Save: A Field Experiment from Guatemala. *Economic Development and Cultural Change*, 62(1), pp. 21–64. https://doi.org/10.1086/671713

Ayadi, R., & Shaban, M. (2020). Digital financial inclusion: a pillar of resilience amidst Covid-19. EMEA policy paper, pp. 1-16. https://euromed-economists.org/download/digital-financial-inclusion-a-pillar-of-resilience-amidst-covid-19-in-the-mediterranean-and-africa/#flipbook-df_rand221688067/1/ (accessed January 11, 2025)

Aziz, A., & Naima, U. (2021). Rethinking digital financial inclusion: Evidence from Bangladesh. *Technology in Society*, 64, 101509, pp. 1-10. https://doi.org/10.1016/j.techsoc.2020.101509

Backman, M. (2015). Banks and new firm formation. *Journal of Small Business and Enterprise Development*, 22(4), pp. 734–761. https://doi.org/10.1108/jsbed-03-2013-0035

Bandura, R., & Ramanujam, S. R. (2022). Developing inclusive digital payment systems. *Center for Strategic and International Studies (CSIS)*, pp. 1-12. https://www.csis.org/analysis/developing-inclusive-digital-payment-systems (accessed January 11, 2025)

Banerjee, Anurag Narayan and Hasan, Iftekhar and Kumar, Kamlesh and Philip, Dennis, The Power of a Financially Literate Woman in Intra-Household Financial Decision-Making (ver. June 23, 2025). Available at SSRN, pp. 1-46. https://dx.doi.org/10.2139/ssrn.3246314 (accessed November 30, 2025)

Bartfeld, J., & Collins, J. M. (2017). Food Insecurity, Financial Shocks, and Financial Coping Strategies among Households with Elementary School Children in Wisconsin. *Journal of Consumer Affairs*, 51(3), pp. 519–548. https://doi.org/10.1111/joca.12162

Bashminova, D., Gergokov, M., & Ovchinnikov, V. (2024, October). Cryptography methods in protecting financial transactions. *IEEE 65th International Scientific Conference on Information Technology and Management Science of Riga Technical University (ITMS),* Riga, Latvia, 2024, pp. 1-5. . https://doi.org/10.1109/ITMS64072.2024.10741926

Basnet, H. C., & Donou-Adonsou, F. (2018). Marriage between credit cards and the Internet: Buying is just a click away! *Review of Financial Economics*, 36(3), pp. 252–266. https://doi.org/10.1002/rfe.1019

Bayuk, J., & Altobello, S. A. (2019). Can gamification improve financial behavior? The moderating role of app expertise. *International Journal of Bank Marketing*, 37(4), pp. 951–975. https://doi.org/10.1108/ijbm-04-2018-0086

Belayeth Hussain, A. H. M., Endut, N., Das, S., Chowdhury, M. T. A., Haque, N., Sultana, S., & Ahmed, K. J. (2019). Does financial inclusion increase financial resilience? Evidence from Bangladesh. *Development in Practice*, 29(6), pp. 798-807. https://doi.org/10.1080/09614524.2019.1607256

Bendig, M., & Arun, T. (2011). Microfinancial services and risk management: Evidences from Sri Lanka. *Journal of Economic Development*, 36(4), pp. 97–126. https://doi.org/10.35866/caujed.2011.36.4.005

Berloffa, G., & Modena, F. (2012). Income shocks, coping strategies, and consumption smoothing: An application to Indonesian data. *Journal of Asian Economics*, 24, pp. 158–171. https://doi.org/10.1016/j.asieco.2012.11.004

Bharadwaj, P., Jack, W., & Suri, T. (2019). Fintech and household resilience to shocks: Evidence from digital loans in Kenya. *National Bureau of Economic Research,* pp. 1-47. https://doi.org/10.3386/w25604

Bhargava, V., Palmer, L., Chatterjee, S., & Stebbins, R. (2018). Supportive and mitigating factors associated with financial resiliency and distress. *Financial Planning Review*, 1(3-4), e1023, pp. 1-20. https://doi.org/10.1002/cfp2.1023

Bialowolski, P., Weziak-Bialowolska, D., & McNeely, E. (2021). The role of Financial Fragility and Financial Control for Well-Being. *Social Indicators Research*, 155(3), pp. 1137–1157. https://doi.org/10.1007/s11205-021-02627-5

Bialowolski, P., Xiao, J. J., & Weziak-Bialowolska, D. (2023). National culture and financial capability: A global perspective. *Social Indicators Research*, 170(3), pp. 877-891. https://doi.org/10.1007/s11205-023-03221-7

Bjørnskov, C., Dreher, A., & Fischer, J. a. V. (2007). Cross-country determinants of life satisfaction: exploring different determinants across groups in society. *Social Choice and Welfare*, 30(1), pp. 119–173. https://doi.org/10.1007/s00355-007-0225-4

Bliese, P. D., Maltarich, M. A., & Hendricks, J. L. (2018). Back to Basics with Mixed-Effects Models: Nine Take-Away Points. *Journal of Business and Psychology*, 33(1), pp. 1–23. https://doi.org/10.1007/s10869-017-9491-z

Block, P. J. (2022). *Mobile Money and Financial Resilience: Overcoming Economic Shocks Through Digital Financial Technology*. BBA Senior Thesis. University of Michigan. https://dx.doi.org/10.7302/4829

Bloem, J. R., & Oswald, A. J. (2022). The analysis of human feelings: a practical suggestion for a robustness test. *Review of Income and Wealth*, 68(3), pp. 689-710. https://doi.org/10.1111/roiw.12531

Bonfrer, I., & Gustafsson-Wright, E. (2016). Health shocks, coping strategies and foregone healthcare among agricultural households in Kenya. *Global Public Health*, 12(11), pp. 1369–1390. https://doi.org/10.1080/17441692.2015.1130847

Borkovec, T. D., Robinson, E., Pruzinsky, T., & DePree, J. A. (1983). Preliminary exploration of worry: Some characteristics and processes. *Behaviour Research and Therapy*, 21(1), pp. 9-16. https://doi.org/10.1016/0005-7967(83)90121-3

Boussard, J., Castrovillari, C., Mineyama, T., Spinella, M., Tabti, B., & Tuuli, M. (2024). Global Shocks Unfolding: Lessons from Fragile and Conflict-affected States. *IMF Working Papers*, 2004(214), pp. 1-40. https://doi.org/10.5089/9798400290824.001 (accessed September 27, 2025)

Bowen, T., Del Ninno, C., Andrews, C., Coll-Black, S., Johnson, K., Kawasoe, Y., Kryeziu, A., Maher, B. and Williams, A., (2020). Adaptive social protection: building resilience to shocks. *World Bank*, pp. 1-155. https://doi.org/10.1596/978-1-4648-1575-1

Brown, M., Henchoz, C., & Spycher, T. (2018). Culture and financial literacy: Evidence from a within-country language border. *Journal of Economic Behavior & Organization*, 150, pp. 62-85. https://doi.org/10.1016/j.jebo.2018.03.011

Brown, S., Taylor, K., & Price, S. W. (2005). Debt and distress: Evaluating the psychological cost of credit. *Journal of Economic Psychology*, 26(5), pp. 642-663. https://doi.org/10.1016/j.joep.2005.01.002

Brune, L., Giné, X., Goldberg, J., & Yang, D. (2016). Facilitating savings for agriculture: Field experimental evidence from Malawi. *Economic Development and Cultural Change*, 64(2), pp. 187-220. https://doi.org/10.1086/684014

Bruni, L., & Stanca, L. (2006). Income Aspirations, Television and Happiness: Evidence from the World Values Survey. *Kyklos*, 59(2), pp. 209–225. https://doi.org/10.1111/j.1467-6435.2006.00325.x

Caplan, L. J., & Schooler, C. (2007). Socioeconomic status and financial coping strategies: The mediating role of perceived control. *Social psychology quarterly*, 70(1), pp. 43-58. https://doi.org/10.1177/019027250707000106

Castro-González, S., Fernández-López, S., Rey-Ares, L., & Rodeiro-Pazos, D. (2020). The influence of attitude to money on individuals' financial Well-Being. *Social Indicators Research*, 148(3), pp. 747–764. https://doi.org/10.1007/s11205-019-02219-4

Chakrabarty, M., & Mukherjee, S. (2021). Financial Inclusion and Household Welfare: An Entropy-Based Consumption Diversification Approach. *European Journal of Development Research*, 34(3), pp. 1486–1521. https://doi.org/10.1057/s41287-021-00431-y

Chen, Z., & Jin, M. (2017). Financial inclusion in China: use of credit. *Journal of Family and Economic Issues*, 38(4), pp. 528–540. https://doi.org/10.1007/s10834-017-9531-x

Choudhury, S. (2004). Transaction cost and asymmetry of information-twin odds of Indian commercial banks in rural credit market: Theoretical fragility. *Social Change and Development*, Vol. 2 No.1, March, pp. 157-174. https://mpra.ub.uni-muenchen.de/34951/

Chui, A. C., & Kwok, C. C. (2008). National culture and life insurance consumption. *Journal of International Business Studies*, 39, pp. 88-101. https://doi.org/10.1057/palgrave.jibs.8400316

Churchill, S. A., & Marisetty, V. B. (2020). Financial inclusion and poverty: a tale of forty-five thousand households. *Applied Economics*, 52(16), pp. 1777–1788. https://doi.org/10.1080/00036846.2019.1678732

Cicchiello, A. F., Kazemikhasragh, A., Monferrá, S., & Girón, A. (2021). Financial inclusion and development in the least developed countries in Asia and Africa. *Journal of Innovation and Entrepreneurship*, 10(1), pp. 1-13. https://doi.org/10.1186/s13731-021-00190-4

Clark, A., Frijters, P., & Shields, M. A. (2008). Relative Income, Happiness, and Utility: An explanation for the Easterlin Paradox and other puzzles. *SSRN Electronic Journal*, 46(1), pp. 95–144. https://doi.org/10.1257/jel.46.1.95

Comerton-Forde, C., De New, J., Salamanca, N., Ribar, D. C., Nicastro, A., & Ross, J. (2022). Measuring Financial Wellbeing with Self-Reported and Bank Record Data. *Economic Record*, 98(321), pp. 133–151. https://doi.org/10.1111/1475-4932.12664

Conger, R. D., Elder, G. H., Lorenz, F. O., Conger, K. J., Simons, R. L., Whitbeck, L. B., Huck, S., & Melby, J. N. (1990). Linking economic hardship to marital quality and instability. *Journal of Marriage and the Family*, 52(3), pp. 643-656. https://doi.org/10.2307/352931

Consumer Financial Protection Bureau (CFPB) (2015). *Financial Well-Being: The Goal of Financial Education*, pp. 1-48. https://files.consumerfinance.gov/f/201501_cfpb_report_financial-well-being.pdf (accessed September 27, 2025)

Crossley, T. F., Fisher, P., & Low, H. (2021). The heterogeneous and regressive consequences of COVID-19: Evidence from high quality panel data. *Journal of Public Economics*, 193, 104334, pp. 1-11. https://doi.org/10.1016/j.jpubeco.2020.104334

Dalton, P. S., Nhung, N., & Rüschenpöhler, J. (2020). Worries of the poor: The impact of financial burden on the risk attitudes of micro-entrepreneurs. *Journal of Economic Psychology*, 79, 102198, pp. 1-12. https://doi.org/10.1016/j.joep.2019.102198

Dang, H. H., & Nguyen, C. V. (2021). Gender inequality during the COVID-19 pandemic: Income, expenditure, savings, and job loss. *World Development*, 140, 105296, pp. 1-10. https://doi.org/10.1016/j.worlddev.2020.105296

Dawood, T. C., Pratama, H., Masbar, R., & Effendi, R. (2019). Does financial inclusion alleviate household poverty? Empirical evidence from Indonesia. *Economics & Sociology*, 12(2), pp. 235–252. https://doi.org/10.14254/2071-789x.2019/12-2/14

De Bruijn, E., & Antonides, G. (2020). Determinants of financial worry and rumination. *Journal of Economic Psychology*, 76, 102233, pp. 1-18. https://doi.org/10.1016/j.joep.2019.102233

De Laat, K. (2023). Living to Work (from Home): Overwork, Remote Work, and Gendered Dual Devotion to Work and Family. *Work and Occupations*, 52(1), pp. 130–165. https://doi.org/10.1177/07308884231207772

De Mooij, M., & Hofstede, G. (2002). Convergence and divergence in consumer behavior: implications for international retailing. *Journal of Retailing*, 78(1), pp. 61-69. https://doi.org/10.1016/S0022-4359(01)00067-7

Deininger, K., Nagarajan, H. K., & Singh, S. K. (2019). Women's political leadership and economic empowerment: Evidence from public works in India. *Journal of Comparative Economics*, 48(2), pp. 277–291. https://doi.org/10.1016/j.jce.2019.12.003

Dejuán, Ó. (2013). The debt trap. In Ó. Dejuán, E. F. Paños, & J. U. Gonzalez, *Post-Keynesian Views of the Crisis and its Remedies*, pp. 87-107. Routledge. https://doi.org/10.4324/9780203528549

Demir, A., Pesqué-Cela, V., Altunbas, Y., & Murinde, V. (2022). Fintech, financial inclusion and income inequality: a quantile regression approach. *European Journal of Finance*, 28(1), pp. 86–107. https://doi.org/10.1080/1351847x.2020.1772335

Demirgüç-Kunt, A., & Klapper, L. (2013). Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries. *Brookings Papers on Economic Activity*, 2013(1), pp. 279–340. https://doi.org/10.1353/eca.2013.0002

Demirguc-Kunt, A., Klapper, L., & Singer, D. (2013). Financial Inclusion and Legal Discrimination against Women: Evidence from Developing Countries. *World Bank, Washington, DC eBooks*, pp. 1-47. https://doi.org/10.1596/1813-9450-6416

Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. *World Bank Publications*, pp. 1-225. http://documents.worldbank.org/curated/en/099818107072234182 (accessed January 11, 2025)

Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2015). The Global Findex Database 2014: Measuring Financial Inclusion around the World. *World Bank, Washington, DC eBooks*, pp. 1-97. https://doi.org/10.1596/1813-9450-7255

Demirguc-Kunt, Asli; Klapper, Leora; Singer, Dorothe (2017). Financial inclusion and inclusive growth : a review of recent empirical evidence (English). Policy Research working paper no. WPS 8040, *World Bank Group, Washington, D.C.*, pp. 1-27. http://documents.worldbank.org/curated/en/403611493134249446 (accessed January 11, 2025)

Dercon, S. (2002). Income risk, coping strategies, and safety nets. *The World Bank Research Observer*, 17(2), pp. 141–166. https://doi.org/10.1093/wbro/17.2.141

DeRigne, L., Dare, P. S., Collins, C., Quinn, L. M., & Fuller, K. (2019). Working US adults without paid sick leave report more worries about finances. *Journal of Social Service Research*, 45(4), pp. 570-581. https://doi.org/10.1080/01488376.2018.1481176

Di Battista, A., Grayling, S., Hasselaar, E., Leopold, T., Li, R., Rayner, M., & Zahidi, S. (2023, May). Future of jobs report 2023. *World Economic Forum, Geneva, Switzerland*, pp. 1-296. https://www3.weforum.org/docs/WEF_Future_of_Jobs_2023.pdf (accessed January 11, 2025)

Diehl, A. B., Stephenson, A. L., Dzubinski, L. M., & Wang, D. C. (2020). Measuring the invisible: Development and multi-industry validation of the Gender Bias Scale for Women Leaders. *Human Resource Development Quarterly*, 31(3), pp. 249–280. https://doi.org/10.1002/hrdq.21389

Diniz, E., Birochi, R., & Pozzebon, M. (2012). Triggers and barriers to financial inclusion: The use of ICT-based branchless banking in an Amazon county. *Electronic Commerce Research and Applications*, 11(5), pp. 484-494. https://doi.org/10.1016/j.elerap.2011.07.006

Dluhopolskyi, O., Pakhnenko, O., Lyeonov, S., Semenog, A., Artyukhova, N., Cholewa-Wiktor, M., & Jastrzębski, W. (2023). Digital Financial Inclusion: COVID-19 Impacts and opportunities. *Sustainability*, 15(3), 2383, pp. 1-20. https://doi.org/10.3390/su15032383

Do, M. H. (2023). The role of savings and income diversification in households' resilience strategies: Evidence from rural Vietnam. *Social Indicators Research*, 168(1), pp. 353-388. https://doi.org/10.1007/s11205-023-03141-6

Dogan, E., Madaleno, M., & Taskin, D. (2022). Financial inclusion and poverty: evidence from Turkish household survey data. *Applied Economics*, 54(19), pp. 2135-2147. https://doi.org/10.1080/00036846.2021.1985076

Doss, C. (2013). Intrahousehold bargaining and resource allocation in developing countries. *The World Bank Research Observer*, 28(1), pp. 52–78. https://doi.org/10.1093/wbro/lkt001

Du, Q., Zhou, F., Yang, T., & Du, M. (2023). Digital financial inclusion, household financial participation and well-being: micro-evidence from China. *Emerging Markets Finance and Trade*, 59(6), pp. 1782-1796. https://doi.org/10.1080/1540496x.2022.2153592

Du, Y., Wang, Q., & Zhou, J. (2023). How does digital inclusive finance affect economic resilience: Evidence from 285 cities in China. *International Review of Financial Analysis*, 88, 102709, pp. 1-12. https://doi.org/10.1016/j.irfa.2023.102709

Dutra, V. R., Flores, S. a. M., Vieira, K. M., & Bunde, A. (2023). Government emergency aid and perceived financial security in COVID-19: evidence from a sample of vulnerable women in Brazil. *International Journal of Bank Marketing*, 41(5), pp. 1059–1082. https://doi.org/10.1108/ijbm-07-2022-0333

Duttagupta, R., & Pazarbasioglu, C. (2021). Miles to go. *Finance and Development – International Monetary Fund*, pp. 1-9. https://www.imf.org/external/pubs/ft/fandd/2021/06/the-future-of-emerging-markets-duttagupta-and-pazarbasioglu.htm (accessed January 11, 2025)

Duvendack, M., & Mader, P. (2020). Impact of financial inclusion in low-and middle-income countries: A systematic review of reviews. *Journal of Economic Surveys*, 34(3), pp. 594-629. https://doi.org/10.4073/csr.2019.2

England, G.W., 1967. Personal value systems of American managers. *Academy of Management Journal* 10, pp. 53–68. https://doi.org/10.5465/255244

Fachrudin, K. A., Pirzada, K., & Iman, M. F. (2022). The role of financial behavior in mediating the influence of socioeconomic characteristics and neurotic personality traits on financial satisfaction. *Cogent Business & Management*, 9(1), pp. 1-20. https://doi.org/10.1080/23311975.2022.2080152

Fan, L., & Babiarz, P. (2019). The determinants of subjective financial satisfaction and the moderating roles of gender and marital status. *Family and Consumer Sciences Research Journal*, 47(3), pp. 237–259. https://doi.org/10.1111/fcsr.12297

Fernández-López, S., Álvarez-Espiño, M., Rey-Ares, L., & Castro-González, S. (2024). Consumer financial vulnerability: review, synthesis, and future research agenda. *Journal of Economic Surveys*, 38(4), pp. 1045-1084. https://doi.org/10.1111/joes.12573

Flory, J. A. (2018). Formal finance and informal safety nets of the poor: Evidence from a savings field experiment. Journal of Development Economics, 135, pp. 517–533. https://doi.org/10.1016/j.jdeveco.2018.07.015

Fonseca, J., & Matray, A. (2024). Financial inclusion, economic development, and inequality: Evidence from Brazil. *Journal of Financial Economics*, 156, 103854, pp. 1-22. https://doi.org/10.1016/j.jfineco.2024.103854

Freeston, M. H., Rhéaume, J., Letarte, H., Dugas, M. J., & Ladouceur, R. (1994). Why do people worry?. Personality and individual differences, 17(6), pp. 791-802. https://doi.org/10.1016/0191-8869(94)90048-5

Fungáčová, Z., & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, 34, pp. 196-206. https://doi.org/10.1016/j.chieco.2014.12.004

Gao, J., Wu, Y., & Li, H. (2024). Digital Inclusive Finance, Rural Loan Availability, and Urban–Rural Income Gap: Evidence from China. *Sustainability* (2071-1050), 16(22), pp. 1-23. https://doi.org/10.3390/su16229763

Garz, S., Giné, X., Karlan, D., Mazer, R., Sanford, C., & Zinman, J. (2021). Consumer protection for financial inclusion in low-and middle-income countries: Bridging regulator and academic perspectives. *Annual Review of Financial Economics*, 13(1), pp. 219-246. https://doi.org/10.1146/annurev-financial-071020-012008

Gelfand, M.J., Nishii, L.H., Raver, J.L., 2006. On the nature and importance of cultural tightness–looseness. *Journal of Applied Psychology*, 91 (6), pp. 1225–1244. https://doi.org/10.1037/0021-9010.91.6.1225

George, L. K. (1992). Economic status and subjective well-being: A review of the literature and an agenda for future research. In N. E. Cutler, D. W. Gregg, & M. P. Lawton (Eds.), *Aging, money, and life satisfaction: Aspects of financial gerontology*, pp. 69–99. Springer Publishing Company. https://psycnet.apa.org/record/1992-98163-005

Goel, A. (2023). Trends and reforms of financial inclusion in India. *International Review of Applied Economics*, 37(2), pp. 275-285. https://doi.org/10.1080/02692171.2023.2167952

Gricius, G. (2020). Russia's new soft power: The Mir Card system. *Journal of Liberty and International Affairs*, 6(2), pp. 32-44. https://doi.org/10.47305/jlia2020032g

Gu, R., Peng, C., & Zhang, W. (2024). The Gender Gap in Household Bargaining Power: A Revealed-Preference Approach. *Review of Financial Studies*, pp. 1-43. https://doi.org/10.1093/rfs/hhae039

Gudmunson, C. G., Beutler, I. F., Israelsen, C. L., McCoy, J. K., & Hill, E. J. (2007). Linking financial strain to marital instability: Examining the roles of emotional distress and marital interaction. *Journal of Family and Economic Issues*, 28(3), pp. 357–376. https://doi.org/10.1007/s10834-007-9074-7

Guiso, L., Sapienza, P., & Zingales, L. (2006). Does culture affect economic outcomes?. *Journal of Economic perspectives*, 20(2), pp. 23-48. https://doi.org/10.1257/jep.20.2.23

Gummerson, E., & Schneider, D. (2012). Eat, Drink, man, woman: gender, income share and household expenditure in South Africa. *Social Forces*, 91(3), pp. 813–836. https://doi.org/10.1093/sf/sos173

Gupta, J., Bavinck, M., Ros-Tonen, M., Asubonteng, K., Bosch, H., Ewijk, E. van, Hordijk, M., Van Leynseele, Y., Lopes Cardozo, M., Miedema, E., Pouw, N., Rammelt, C., Scholtens, J., Vegelin, C., Verrest, H. (2021). COVID-19, poverty and inclusive development. *World Development*, 145, 105527, pp. 1-13. https://doi.org/10.1016/j.worlddev.2021.105527

Gutiérrez-Romero, R., & Ahamed, M. (2021). COVID-19 response needs to broaden financial inclusion to curb the rise in poverty. *World Development*, 138, 105229, pp. 1-37. https://doi.org/10.1016/j.worlddev.2020.105229

Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano J., M. Lagos, P. Norris, E. Ponarin & B. Puranen (Eds.). (2022). World Values Survey: Round Seven – Country-Pooled Datafile Version 6.0. *Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat*. https://doi.org/10.14281/18241.24

Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E. & Puranen B. (2022). World Values Survey Wave 7 (2017-2022) Cross-National Data-Set. Version: 4.0.0. *World Values Survey Association*. https://doi.org/10.14281/18241.18

Hall, E.T. (1977). *Beyond Culture*. Doubleday, New York, USA.

Hamid, F. S., Loke, Y. J., & Chin, P. N. (2023). Determinants of financial resilience: insights from an emerging economy. *Journal of Social and Economic Development*, 25(2), pp. 479-499. https://doi.org/10.1007/s40847-023-00239-y

Handy, F., & Sealey, A. (2022). Voluntary sector participation and individual health and welfare: Does it matter where? *Social Science Quarterly*, 103(3), pp. 471–493. https://doi.org/10.1111/ssqu.13135

Hasler, A., Lusardi, A., Yagnik, N., & Yakoboski, P. (2023). Resilience and wellbeing in the midst of the COVID-19 pandemic: The role of financial literacy. *Journal of Accounting and Public Policy*, 42(2), 107079, pp. 1-17. https://doi.org/10.1016/j.jaccpubpol.2023.107079

Haushofer, J., & Shapiro, J. (2016). The short-term impact of unconditional cash transfers to the poor: experimental evidence from Kenya. *The Quarterly Journal of Economics*, 131(4), pp. 1973-2042. https://doi.org/10.1093/qje/qjw025

Havasi, V. (2011). Financial situation and its consequences on the quality of life in the EU countries. *Social Indicators Research*, 113(1), pp. 17–35. https://doi.org/10.1007/s11205-011-9901-y

Hayhoe, C. R., & Wilhelm, M. S. (1998). Modeling perceived economic well-being in a family setting: A gender perspective. Financial Counseling and Planning, 9(1), pp. 21–34.

Heilman, M. E., Caleo, S., & Manzi, F. (2023). Women at Work: Pathways from Gender Stereotypes to Gender Bias and Discrimination. *Annual Review of Organizational Psychology and Organizational Behavior*, 11(1), pp. 165–192. https://doi.org/10.1146/annurev-orgpsych-110721-034105

Hendriks, S. (2019). The role of financial inclusion in driving women's economic empowerment. *Development in Practice*, 29(8), pp. 1029-1038. https://doi.org/10.1080/09614524.2019.1660308

Hess, J., Klapper, L., & Beegle, K. (2021). Financial inclusion, women, and Building Back Better. In *World Bank, Washington, DC eBooks*, pp. 1-6. https://doi.org/10.1596/35870

Hira, T. K., & Mugenda, O.M. (1999). The relationships between self-worth and financial beliefs, behavior, and satisfaction. *Journal of Family and Consumer Sciences*, 91(4), pp. 76–82.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. Online readings in psychology and culture, 2(1), 8, pp. 1-26. https://doi.org/10.9707/2307-0919.1014

Hofstede, G., 1983. The cultural relativity of organizational practices and theories. Journal of International Business Studies 14, pp. 75–79. https://doi.org/10.1057/palgrave.jibs.8490867

Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind (3rd ed.).* New York: McGraw-Hill.

Holling, C. S. (1973). Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 4(1), pp. 1–23. https://doi.org/10.1146/annurev.es.04.110173.000245

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P. W., Gupta, V. (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Sage Publications, Thousand Oaks, CA.

Hox, J. J. (1995). *Applied multilevel analysis*. TT-publikaties.

Hox, J., Moerbeek, M., & Van de Schoot, R. (2017). *Multilevel analysis: Techniques and applications*. Routledge.

Huh, I., & Gim, J. (2025). Exploration of Likert scale in terms of continuous variable with parametric statistical methods. *BMC Medical Research Methodology*, 25(1), 218, pp 1-10. https://doi.org/10.1186/s12874-025-02668-1

Inglehart, R. (1997). *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton University Press, Princeton, NJ. https://doi.org/10.2307/j.ctv10vm2ns

Inglehart, R., Haerpfer, C., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano J., M. Lagos, P. Norris, E. Ponarin & B. Puranen (Eds.). (2014). World Values Survey: All Rounds - Country-Pooled Datafile. *Madrid, Spain & Vienna, Austria: JD Systems Institute & WVSA Secretariat*. Dataset Version 3.0.0. doi:10.14281/18241.17

International Labour Office (2024). World Employment and Social Outlook: Trends 2024. *International Labour Organization,* pp. 1-120. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@inst/documents/publication/wcms_908142.pdf (accessed November 30, 2025)

International Labour Office (2022). Working time and Work-Life balance around the world. *International Labour Organization*, pp. 1-176. https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_864222.pdf (accessed November 30, 2025)

Jiang, Y., & Liu, Y. (2022). Does financial inclusion help alleviate household poverty and vulnerability in China?. *Plos One*, 17(10), e0275577, pp. 1-21. https://doi.org/10.1371/journal.pone.0275577

Joo, S., & Grable, J. E. (2004). An exploratory framework of the determinants of financial satisfaction. *Journal of Family and Economic Issues*, 25(1), pp. 25–50. https://doi.org/10.1023/b:jeei.0000016722.37994.9f

Kabakova, O., & Plaksenkov, E. (2018). Analysis of factors affecting financial inclusion: Ecosystem view. *Journal of Business Research*, 89, pp. 198-205. https://doi.org/10.1016/j.jbusres.2018.01.066

Kalbarczyk, A., Banchoff, K., Perry, K. E., Nielsen, C. P., Malhotra, A., & Morgan, R. (2025). A scoping review on the impact of women's global leadership: evidence to inform health leadership. *BMJ Global Health*, 10(2), e015982, pp. 1-13. https://doi.org/10.1136/bmjgh-2024-015982

Kapelle, N., Frémeaux, N., Lersch, P. M., & Leturcq, M. (2025). A cohabitation wealth premium for women and men: considering the regulatory framework and normative acceptance in France and Germany. *Socio-Economic Review*, 23(2), pp. 591–620. https://doi.org/10.1093/ser/mwaf013

Kara, A., Zhou, H., & Zhou, Y. (2021). Achieving the United Nations' sustainable development goals through financial inclusion: A systematic literature review of access to finance across the globe. *International Review of Financial Analysis*, 77, 101833, pp. 1-16. https://doi.org/10.1016/j.irfa.2021.101833

Karpowicz, I. (2016). Financial inclusion, growth and inequality: a model application to Colombia. *Journal of Banking and Financial Economics*, 6(2), pp. 68-89. https://doi.org/10.7172/2353-6845.jbfe.2016.2.4

Kass-Hanna, J., Lyons, A. C., & Liu, F. (2022). Building financial resilience through financial and digital literacy in South Asia and Sub-Saharan Africa. *Emerging Markets Review*, 51, 100846, pp. 1-28. https://doi.org/10.1016/j.ememar.2021.100846

Kaya, O. (2013). Is perceived financial inadequacy persistent? *Review of Income and Wealth*, 60(4), pp. 636–654. https://doi.org/10.1111/roiw.12067

Kearney, E., Razinskas, S., Weiss, M., & Hoegl, M. (2022). Gender diversity and team performance under time pressure: The role of team withdrawal and information elaboration. *Journal of Organizational Behavior*, 43(7), pp. 1224-1239. https://doi.org/10.1002/job.2630

Khandker, S. R. (2007). Coping with flood: role of institutions in Bangladesh. *Agricultural Economics*, 36(2), pp. 169-180. https://doi.org/10.1111/j.1574-0862.2007.00196.x

Khera, P., Ng, S., Ogawa, S., & Sahay, R. (2022). Measuring digital financial inclusion in emerging market and developing economies: A new index. *Asian Economic Policy Review*, 17(2), pp. 213-230. https://doi.org/10.1111/aepr.12377

Kim, K. (2022). Assessing the impact of mobile money on improving the financial inclusion of Nairobi women. *Journal of Gender Studies*, 31(3), pp. 306-322. https://doi.org/10.1080/09589236.2021.1884536

Kim, K.T., Xiao, J.J. and Porto, N. (2024). Financial inclusion, financial capability and financial fragility during COVID-19 pandemic. *International Journal of Bank Marketing*, 42(3), pp. 414-436. https://doi.org/10.1108/IJBM-07-2023-0373

Kim, M., & Duvendack, M. (2024). Digital credit for all? An empirical analysis of mobile loans for financial inclusion in Kenya. *Information Technology for Development*, 31(3), pp. 559–576. https://doi.org/10.1080/02681102.2024.2402996

Kitterød, R. H., & Lappegård, T. (2012). A typology of Work-Family arrangements among Dual-Earner couples in Norway. *Family Relations*, 61(4), pp. 671–685. https://doi.org/10.1111/j.1741-3729.2012.00725.x

Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*, 49(3), pp. 589-614. https://doi.org/10.1111/fima.12283

Klapper, L., Lusardi, A., & Panos, G. A. (2013). Financial literacy and its consequences: Evidence from Russia during the financial crisis. *Journal of Banking & Finance*, 37(10), pp. 3904-3923. https://doi.org/10.1016/j.jbankfin.2013.07.014

Kling, G., Pesqué-Cela, V., Tian, L., & Luo, D. (2022). A theory of financial inclusion and income inequality. *The European Journal of Finance*, 28(1), pp. 137-157. https://doi.org/10.1080/1351847x.2020.1792960

Koku, P. S. (2015). Financial exclusion of the poor: a literature review. *International Journal of Bank Marketing*, 33(5), pp. 654-668. https://doi.org/10.1108/IJBM-09-2014-0134

Koltko-Rivera, M.E., 2004. The psychology of worldviews. *Review of General Psychology* 8 (1), pp. 3–58. https://doi.org/10.1037/1089-2680.8.1.3

Koomson, I., Villano, R. A., & Hadley, D. (2020). Effect of financial inclusion on poverty and vulnerability to poverty: Evidence using a multidimensional measure of financial inclusion. *Social Indicators Research*, 149(2), pp. 613-639. https://doi.org/10.1007/s11205-019-02263-0

Kowalewski, O., & Pisany, P. (2021). Different faces of digital financial inclusion across countries. In *The Digital Disruption of Financial Services*, pp. 24-45. Routledge. https://doi.org/10.4324/9781003199076-2

Kroeber, A.L., Kluckhohn, C. (1952). Culture: A Critical Review of Concepts and Definitions. *Papers of the Peabody Museum of the Archaeology and Ethnology, Harvard University*, Vol. 47(1). Published by the Museum, Cambridge, Massachusetts, USA.

Kuhn, M.H., McPartland, R. (1954). An empirical investigation of self attitudes. *American Sociological Review* 19, pp. 68–76. https://doi.org/10.2307/2088175

Kulic, N., Minello, A., & Zella, S. (2019). Manage your Money, Be satisfied? Money management practices and financial satisfaction of couples through the lens of gender. *Journal of Family Issues*, 41(9), pp. 1420–1446. https://doi.org/10.1177/0192513x19891463

Kulic, N., Minello, A., & Zella, S. (2020). Manage your Money, Be satisfied? Money management practices and financial satisfaction of couples through the lens of gender. *Journal of Family Issues*, 41(9), pp. 1420–1446. https://doi.org/10.1177/0192513x19891463

Kumar, A., Pal, R., & Pal, R. (2019). Usage of formal financial services in India: Demand barriers or supply constraints?. *Economic Modelling*, 80, pp. 244-259. https://doi.org/10.1016/j.econmod.2018.11.010

Kwok, C. C., & Tadesse, S. (2006). National culture and financial systems. *Journal of International Business Studies*, 37, pp. 227-247. https://doi.org/10.1057/palgrave.jibs.8400188

Kyriopoulos, I., Athanasakis, K., & Kyriopoulos, J. (2018). Are happy people healthier? An instrumental variable approach using data from Greece. *Journal of Epidemiol Community Health*, 72(12), pp. 1153-1161. https://doi.org/10.1136/jech-2018-210568

Lai, J. T., Yan, I. K., Yi, X., & Zhang, H. (2020). Digital financial inclusion and consumption smoothing in China. *China & World Economy*, 28(1), pp. 64-93. https://doi.org/10.1111/cwe.12312

Lauer, K., & Lyman, T. (2015). Digital financial inclusion: Implications for customers, regulators, supervisors, and standard-setting bodies. *Washington, DC: Consultative Group to Assist the Poor (CGAP)*, pp. 1-4. https://documents1.worldbank.org/curated/en/770291468338664476/pdf/952100BRI0Box30l0Inclusion0Feb02015.pdf (accessed January 11, 2025)

Lazarus , R. S. and Folkman , S. (1984) . Stress, appraisal, and coping. Springer, New York, USA.

Le, T. H., Chuc, A. T., & Taghizadeh-Hesary, F. (2019). Financial inclusion and its impact on financial efficiency and sustainability: Empirical evidence from Asia. *Borsa Istanbul Review*, 19(4), pp. 310-322. https://doi.org/10.1016/j.bir.2019.07.002

Lee, D. S., McCrary, J., Moreira, M. J., & Porter, J. (2022). Valid t-ratio Inference for IV. *American Economic Review*, 112(10), pp. 3260–3290. https://doi.org/10.1257/aer.20211063

Lee, Y. G., Hales, E., & Kelley, H. H. (2023). Financial behaviors, government assistance, and financial satisfaction. *Social Indicators Research*, 166(1), pp. 85–103. https://doi.org/10.1007/s11205-022-03051-z

Leung, K., Bond, M.H., de Carrasquel, S.R., et al., 2002. Social axioms: the search for universal dimensions of general beliefs about how the world functions. *Journal of Cross-Cultural Psychology* 33 (3), pp. 286–302. https://doi.org/10.1177/0022022102033003005

Leyshon, A., & Thrift, N. (1995). Geographies of Financial Exclusion: Financial abandonment in Britain and the United States. *Transactions of the Institute of British Geographers*, 20(3), pp. 312-341. https://doi.org/10.2307/622654

Leyshon, A., Thrift, N., & Pratt, J. (1998). Reading Financial Services: Texts, Consumers, and Financial Literacy. *Environment and Planning D: Society and Space*, 16(1), pp. 29-55. https://doi.org/10.1068/d160029

Li, H. (2024). Household Mobility Between Formal and Informal Credit Channels and Its Relationship to Economic and Social Status: An Empirical Analysis Based on Micro Data in China. *Journal of the Knowledge Economy*, pp. 1-23. https://doi.org/10.1007/s13132-024-02019-3

Li, Q., & Liu, Q. (2023). Impact of digital financial inclusion on residents' income and income structure. *Sustainability*, 15(3), 2196, pp. 1-20. https://doi.org/10.3390/su15032196

Li, X., Curran, M., Serido, J., LeBaron-Black, A. B., Shim, S., & Zhou, N. (2021). Financial behaviors, financial satisfaction, and goal attainment among college-educated young adults: A mediating analysis with latent change scores. *Applied Developmental Science*, 26(3), pp. 603-617. https://doi.org/10.1080/10888691.2021.1976182

Lin, J. T., Bumcrot, C., Mottola, G., Valdes, O., Ganem, R., Kieffer, C., Lusardi, A., & Walsh, G. (2022). Financial Capability in the United States: Highlights from the FINRA Foundation National Financial Capability Study (5th Edition). *FINRA Investor Education Foundation,* pp. 1-22. www.FINRAFoundation.org/NFCSReport2021 (accessed November 30, 2025)

Litwin, H., & Meir, A. (2013). Financial worry among older people: Who worries and why?. *Journal of Aging Studies*, 27(2), pp. 113-120. https://doi.org/10.1016/j.jaging.2012.12.003

Liu, J., Chen, Y., Chen, X., & Chen, B. (2024). Digital financial inclusion and household financial vulnerability: An empirical analysis of rural and urban disparities in China. *Heliyon*, 10(15), e35540, pp. 1-14. https://doi.org/10.1016/j.heliyon.2024.e35540

Liu, L., & Guo, L. (2023). Digital financial inclusion, income inequality, and vulnerability to relative poverty. *Social Indicators Research*, 170(3), pp. 1155–1181. https://doi.org/10.1007/s11205-023-03245-z

Liu, Y., Luan, L., Wu, W., Zhang, Z., & Hsu, Y. (2021). Can digital financial inclusion promote China's economic growth? *International Review of Financial Analysis*, 78, 101889, pp. 1-13. https://doi.org/10.1016/j.irfa.2021.101889

Liu, Z., Chen, J., & Xiao, J. J. (2025). Financial resilience: a scoping review, conceptual synthesis and theoretical framework. *International Journal of Bank Marketing,* pp. 1541-1576. https://doi.org/10.1108/ijbm-12-2024-0735

Loaba, S. (2022). The impact of mobile banking services on saving behavior in West Africa. *Global Finance Journal*, 53, 100620, pp. 1-11. https://doi.org/10.1016/j.gfj.2021.100620

Lu, W., Niu, G., & Zhou, Y. (2021). Individualism and financial inclusion. *Journal of Economic Behavior & Organization*, 183, pp. 268–288. https://doi.org/10.1016/j.jebo.2021.01.008

Lusardi, A., Hasler, A., & Yakoboski, P. J. (2021). Building up financial literacy and financial resilience. *Mind & Society*, 20, pp. 181-187. https://doi.org/10.1007/s11299-020-00246-0

Lusardi, A., Schneider, D., & Tufano, P. (2011). Financially Fragile Households: Evidence and implications. *Brookings Papers on Economic Activity*, 2011(1), pp. 83–134. https://doi.org/10.1353/eca.2011.0002

Lyness, K. S., & Kropf, M. B. (2005). The relationships of national gender equality and organizational support with work-family balance: A study of European managers. *Human Relations*, 58(1), pp. 33–60. https://doi.org/10.1177/0018726705050934

Magwegwe, F. M., MacDonald, M. M., Lim, H., & Heckman, S. J. (2023). Determinants of financial worry. *Journal of Consumer Affairs*, 57(1), pp. 171–221. https://doi.org/10.1111/joca.12496

Mahalika, R., Matsebula, V., & Yu, D. (2023). Investigating the relationship between financial inclusion and poverty in South Africa. *Development Southern Africa*, 40(1), pp. 109–132. https://doi.org/10.1080/0376835x.2021.1978933

Markose, S., Arun, T., & Ozili, P. (2020). Financial inclusion, at what cost? : Quantification of economic viability of a supply side roll out. *European Journal of Finance*, 28(1), pp. 3–29. https://doi.org/10.1080/1351847x.2020.1821740

Marra, G., & Radice, R. (2011). Estimation of a semiparametric recursive bivariate probit model in the presence of endogeneity. *Canadian Journal of Statistics*, 39(2), pp. 259–279. https://doi.org/10.1002/cjs.10100

Masino, S., & Niño-Zarazúa, M. (2020). Improving Financial Inclusion through the Delivery of Cash Transfer Programmes: The Case of Mexico's Progresa-Oportunidades-Prospera Programme. *The Journal of Development Studies*, 56(1), pp. 151–168. https://doi.org/10.1080/00220388.2018.1546845

McIntyre, D., Thiede, M., Dahlgren, G., & Whitehead, M. (2006). What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts? *Social Science & Medicine*, 62(4), pp. 858–865. https://doi.org/10.1016/j.socscimed.2005.07.001

McKnight, Abigail and Rucci, Marc (2020) The financial resilience of households: 22 country study with new estimates, breakdowns by household characteristics and a review of policy options. CASEpapers (CASE 219). *Centre for Analysis of Social Exclusion*, London, UK, pp. 1-60. http://eprints.lse.ac.uk/id/eprint/121525 (accessed January 11, 2025)

Meier-Pesti, K., & Penz, E. (2008). Sex or gender? Expanding the sex-based view by introducing masculinity and femininity as predictors of financial risk taking. *Journal of Economic Psychology*, 29(2), pp. 180–196. https://doi.org/10.1016/j.joep.2007.05.002

Meuris, J., & Leana, C. (2018). The price of financial precarity: Organizational costs of employees' financial concerns. *Organization Science*, 29(3), pp. 398-417. https://doi.org/10.1287/orsc.2017.1187

Mfossa, P. H. M. (2019, October). Mobile Money-Driven Financial Inclusion and Financial Resilience in Sub-Saharan Africa: Insights from Cameroon. *In En quête d'impact: la finance inclusive au service des Objectifs du Développement Durable*, pp. 1-20. https://hal.science/hal-03622403/ (accessed January 11, 2025)

Mitra, S., Palmer, M., Mont, D., & Groce, N. (2016). Can households cope with health shocks in Vietnam?. *Health economics*, 25(7), pp. 888-907. https://doi.org/10.1002/hec.3196

Mohammed, J. I., Mensah, L., & Gyeke-Dako, A. (2017). Financial inclusion and poverty reduction in Sub-Saharan Africa. *African Finance Journal*, 19(1), pp. 1-22. https://hdl.handle.net/10520/EJC-74aea6652

Möhring, K. (2012). The fixed effects approach as an alternative to multilevel analysis for cross-national analyses. *GK SOCLIFE Working Paper Series, n*o. 16/2012, pp. 1-19. https://doi.org/10.31235/osf.io/3xw7v (accessed January 11, 2025)

Mojica, M. B. R., & Mapa, C. D. S. (2017). An index of financial inclusion in the Philippines: Construction and analysis. *The Philippine Statistician*, 66(1), pp. 59-74. https://www.psai.ph/docs/publications/tps/tps_2017_66_1_5.pdf

Morgan, P. J., & Long, T. Q. (2020). Financial literacy, financial inclusion, and savings behavior in Laos. *Journal of Asian Economics*, 68, 101197, pp. 1-20. https://doi.org/10.1016/j.asieco.2020.101197

Morgan, P. J., & Yoshino, N. (2017). Overview of financial inclusion, regulation, and education. In N. Yoshino & P. J. Morgan (Eds.), *Financial inclusion, regulation, and education: Asian perspectives,* pp. 1-41. Tokyo: Asian Development Bank Institute. https://www.adb.org/sites/default/files/publication/350186/adbi-financial-inclusion-regulation-education-asian-perspectives.pdf (accessed January 11, 2025)

Mulungu, K., & Kilimani, N. (2023). Does forest access reduce reliance on costly shock-coping strategies? Evidence from Malawi. *Ecological Economics*, 209, 107827, pp. 1-12. https://doi.org/10.1016/j.ecolecon.2023.107827

Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle?. *Psychological Bulletin*, 126(2), pp. 247-259. https://doi.org/10.1037/0033-2909.126.2.247

Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion and ICT: Implications for poverty and inequality. *Technology in Society*, 59, 101154, pp. 1-19. https://doi.org/10.1016/j.techsoc.2019.101154

Nandru, P., Chendragiri, M., & Arulmurugan, V. (2024). Socioeconomic determinants of ownership of payment cards, mobile money account, and government remittances of digital financial services: evidence from India. *Journal of Financial Economic Policy*, 16(2), pp. 247-271. https://doi.org/10.1108/jfep-07-2023-0176

Naveenan, R. V., Liew, C. Y., & Kijkasiwat, P. (2024). Nexus Between Financial Inclusion, Digital Inclusion and Health Outcomes: Evidence from Developing Economies. *Social Indicators Research*, 174(1), pp. 367-408. https://doi.org/10.1007/s11205-024-03391-y

Nayak, N. C., Mahakud, J., Mahalik, M. K., Jenamani, M., Samal, A., Sen, S., & Mohanty, A. R. (2024). What determines financial inclusion? A household-level investigation in rural Odisha, India. *Journal of Social and Economic Development*, 26(3), pp. 888-906. https://doi.org/10.1007/s40847-023-00302-8

Netemeyer, R. G., Warmath, D., Fernandes, D., & Lynch Jr, J. G. (2018). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, 45(1), pp. 68-89. https://doi.org/10.1093/jcr/ucx109

Ng, W., & Diener, E. (2014). What matters to the rich and the poor? Subjective well-being, financial satisfaction, and postmaterialist needs across the world. *Journal of Personality and Social Psychology*, 107(2), pp. 326-338. https://doi.org/10.1037/a0036856

Niimi, Y. (2018). What Affects Happiness Inequality? Evidence from Japan. *Journal of Happiness Studies*, 19(2), pp. 521-543. https://doi.org/10.1007/s10902-016-9835-9

Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on psychological science*, 3(5), pp. 400-424. https://doi.org/10.1111/j.1745-6924.2008.00088.x

Nunn, N., & Wantchekon, L. (2011). The slave trade and the origins of mistrust in Africa. *American Economic Review*, 101(7), pp. 3221-3252. https://doi.org/10.1257/aer.101.7.3221

Odhiambo, N. M. (2008). Financial depth, savings and economic growth in Kenya: A dynamic causal linkage. *Economic Modelling*, 25(4), pp. 704-713. https://doi.org/10.1016/j.econmod.2007.10.009

OECD (2017). The Pursuit of Gender Equality: An Uphill Battle. *OECD Publishing*, Paris, pp. 1-306. http://dx.doi.org/10.1787/9789264281318-en

Oke, D.F., Adamson, T.W. (2023). Demand and supply-side determinants of financial inclusion: A case study of micro, small and medium enterprises in Southwest Nigeria. *Review of Socio-Economic Perspectives*, 8(2), pp. 61-73. https://doi.org/10.19275/RSEP157

Ozili, P. K. (2020). Financial inclusion research around the world: A review. *Forum for Social Economics*, 50(4), pp. 457-479. https://doi.org/10.1080/07360932.2020.1715238

Ozili, P. K. (2022). Digital financial inclusion. In K. Sood, R. K. Dhanaraj, B. Balusamy, S. Grima, & R. U. Maheshwari, *Big Data: A Game Changer for Insurance Industry*. . Emerald Publishing Limited, pp. 229-238. https://doi.org/10.1108/978-1-80262-605-620221015

Pal, M., Gupta, H., & Joshi, Y. C. (2022). Social and economic empowerment of women through financial inclusion: empirical evidence from India. *Equality Diversity and Inclusion an International Journal*, 41(2), pp. 294–305. https://doi.org/10.1108/edi-04-2021-0113

Pandey, S., Bhandari, H., Ding, S., Prapertchob, P., Sharan, R., Naik, D., Taunk, S. K., & Sastri, A. (2007). Coping with drought in rice farming in Asia: insights from a cross-country comparative study. *Agricultural Economics*, 37(s1), pp. 213–224. https://doi.org/10.1111/j.1574-0862.2007.00246.x

Peachey, S., & Roe, A. (2004). Access to finance: A study for the World Savings Banks Institute. *Oxford Policy Management,* pp. 1-78. https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-access-to-finance-2004.pdf (accessed January 11, 2025)

Peng, J. (2023). Identification of Causal Mechanisms from Randomized Experiments: A Framework for Endogenous Mediation Analysis. *Information Systems Research*, 34(1), pp. 67-84. https://doi.org/10.1287/isre.2022.1113

Petersen, J. A., Kushwaha, T., & Kumar, V. (2015). Marketing communication strategies and consumer financial decision making: The role of national culture. *Journal of marketing*, 79(1), pp. 44-63. https://doi.org/10.1509/jm.13.0479

Pickbourn, L. (2015). Remittances and household expenditures on education in Ghana's northern region: Why gender matters. *Feminist Economics*, 22(3), pp. 74–100. https://doi.org/10.1080/13545701.2015.1107681

Pimm, S. L. (1984). The complexity and stability of ecosystems. *Nature*, 307(5949), pp. 321–326. https://doi.org/10.1038/307321a0

Pomeranz, D., & Kast, F. (2024). Savings accounts to borrow less: experimental evidence from Chile. *Journal of Human Resources*, 59(1), pp. 70-108. https://doi.org/10.3368/jhr.0619-10264R3

Pomeroy, R., Arango, C., Lomboy, C. G., & Box, S. (2020). Financial inclusion to build economic resilience in small-scale fisheries. *Marine Policy*, 118, 103982, pp. 1-9. https://doi.org/10.1016/j.marpol.2020.103982

Post, C. (2015). When is female leadership an advantage? Coordination requirements, team cohesion, and team interaction norms. *Journal of Organizational Behavior*, 36(8), pp. 1153–1175. https://doi.org/10.1002/job.2031

Pradhan, K. C., & Mukherjee, S. (2018). Covariate and idiosyncratic shocks and coping strategies for poor and non-poor rural households in India. *Journal of Quantitative Economics*, 16(1), pp. 101-127. https://doi.org/10.1007/s40953-017-0073-8

Prina, S. (2015). Banking the poor via savings accounts: Evidence from a field experiment. *Journal of Development Economics*, 115, pp. 16-31. https://doi.org/10.1016/j.jdeveco.2015.01.004

PwC. (2020). PwC's 9th annual Employee Financial Wellness Survey 2020: COVID-19 Update. https://www.pwc.com/us/en/industries/private-company-services/images/pwc-9th-annual-employee-financial-wellness-survey-2020.pdf (accessed September 27, 2025)

PwC. (2022). 2022 PWC Employee Financial Wellness Survey. https://www.pwc.com/us/en/services/consulting/business-transformation/library/assets/pwc-2022-employee-financial-wellness-survey-results.pdf (accessed September 27, 2025)

Rashdan, A., & Eissa, N. (2020). The Determinants of Financial Inclusion in Egypt. International *Journal of Financial Research*, 11(1), pp. 123-136. https://doi.org/10.5430/ijfr.v11n1p123

Ratnawati, K. (2020). The impact of financial inclusion on economic growth, poverty, income inequality, and financial stability in Asia. *Journal of Asian Finance Economics and Business*, 7(10), pp. 73–85. https://doi.org/10.13106/jafeb.2020.vol7.no10.073

Riitsalu, L., & Raaij, F. V. (2020). Self-control, future time perspective and savings–The keys to perceived financial well-being. Technical Report, October, pp. 1–35. https://cepr.org/system/files/2022-08/Self-Control%2C%20Future%20Time%20Perspective%20and%20Savings%20-%20The%20Keys%20to%20Perceived%20Financial%20Well-Being%20-%20Leonore%20Riitsalu%20%26%20Fred%20Van%20Raaij.pdf (accessed September 27, 2025)

Rios, R., & Zautra, A. J. (2011). Socioeconomic disparities in pain: the role of economic hardship and daily financial worry. *Health Psychology*, 30(1), pp. 58-66. https://doi.org/10.1037/a0022025

Rock, D., Grant, H., & Grey, J. (2016, September 22). Diverse Teams Feel Less Comfortable — and That's Why They Perform Better. *Harvard Business Review*, pp. 1-5. https://hbr.org/2016/09/diverse-teams-feel-less-comfortable-and-thats-why-they-perform-better (accessed November 30, 2025)

Rokeach, M. (1973). *The Nature of Human Values*. Free Press, New York. https://psycnet.apa.org/record/2011-15663-000

Rosso, V. F., Muñoz-Pascual, L., & Galende, J. (2024). Do managers need to worry about employees' financial stress? A review of two decades of research. *Human Resource Management Review*, 101030, pp. 1-17. https://doi.org/10.1016/j.hrmr.2024.101030

Ruiz Ortega, C. (2013). From pawn shops to banks: The impact of formal credit on informal households. *World Bank policy research working paper,* (6634), pp. 1-55. https://doi.org/10.1596/1813-9450-6634

Sagiv, L., & Schwartz, S. H. (2021). Personal values across cultures. *Annual Review of Psychology*, 73(1), pp. 517–546. https://doi.org/10.1146/annurev-psych-020821-125100

Sahay, R., Srivastava, N., Vasishth, M., & Center for Global Development. (2024). Female leadership in India: firm performance and culture. *Center for Global Development,* pp. 1-56. https://www.cgdev.org/sites/default/files/female-leadership-india-firm-performance-and-culture.pdf (accessed November 30, 2025)

Sakyi-Nyarko, C., Ahmad, A. H., & Green, C. J. (2022). The gender-differential effect of financial inclusion on household financial resilience. *The Journal of Development Studies*, 58(4), pp. 692-712. https://doi.org/10.1080/00220388.2021.2013467

Salignac, F., Hamilton, M., Noone, J., Marjolin, A., & Muir, K. (2020). Conceptualizing financial wellbeing: An ecological life-course approach. *Journal of Happiness Studies*, 21, pp. 1581-1602. https://doi.org/10.1007/s10902-019-00145-3

Salignac, F., Hanoteau, J., & Ramia, I. (2022). Financial resilience: a way forward towards economic development in developing countries. *Social Indicators Research*, 160(1), pp. 1–33. https://doi.org/10.1007/s11205-021-02793-6

Salignac, F., Marjolin, A., Reeve, R., & Muir, K. (2019). Conceptualizing and measuring financial resilience: A multidimensional framework. *Social Indicators Research*, 145, pp. 17-38. https://doi.org/10.1007/s11205-019-02100-4

Sani, G. M. D., & Quaranta, M. (2017). The best is yet to come? Attitudes toward gender roles among adolescents in 36 countries. *Sex Roles*, 77(1–2), pp. 30–45. https://doi.org/10.1007/s11199-016-0698-7

Sarkar, S., Nair, S., & Rao, M. V. V. (2023). Exploring the Gender Dimension in Financial Inclusion in India: Insights from the Global Findex Database. *Journal of Development Policy and Practice*, 8(2), pp. 141–161. https://doi.org/10.1177/24551333221141570

Sarma, M., & Pais, J. (2011). Financial Inclusion and Development. *Journal of International Development*, 23(5), pp. 613–628. https://doi.org/10.1002/jid.1698

Schnepf, S. V. (2010). Gender differences in subjective well-being in Central and Eastern Europe. *Journal of European Social Policy*, 20(1), pp. 74–85. https://doi.org/10.1177/0958928709352542

Schwartz, S.H. (1994). Beyond Individualism/Collectivism: New Cultural Dimensions of Values. In U. Kim, H.C. Traindis, C. Kagitcibasi, S. Choi, & G. Yoon (Eds.), *Individualism and Collectivism: Theory, Method, and Application*, pp. 85-119. Sage, Thousand Oaks. https://psycnet.apa.org/record/1996-97151-003

Seierstad, C., & Kirton, G. (2015). Having it all? Women in high commitment careers and Work–Life balance in Norway. *Gender Work and Organization*, 22(4), pp. 390–404. https://doi.org/10.1111/gwao.12099

Sen, G., & De, S. (2018). How much does having a bank account help the poor? *The Journal of Development Studies*, 54(9), pp. 1551–1571. https://doi.org/10.1080/00220388.2017.1355455

Shaikh, A. A., Glavee-Geo, R., Karjaluoto, H., & Hinson, R. E. (2023). Mobile money as a driver of digital financial inclusion. *Technological Forecasting and Social Change*, 186, 122158, pp. 1-4. https://doi.org/10.1016/j.techfore.2022.122158

Simonse, O., Van Dijk, W. W., Van Dillen, L. F., & Van Dijk, E. (2024). Economic predictors of the subjective experience of financial stress. *Journal of Behavioral and Experimental Finance*, 42, 100933, pp. 1-13. https://doi.org/10.1016/j.jbef.2024.100933

Singh, A. (2021). Exploring demand-side barriers to credit uptake and financial inclusion. *International Journal of Social Economics*, 48(6), pp. 898–913. https://doi.org/10.1108/ijse-04-2020-0234

Stack, S., & Eshleman, J. R. (1998). Marital Status and Happiness: a 17-Nation study. *Journal of Marriage and the Family*, 60(2), pp. 527-536. https://doi.org/10.2307/353867

Stegmueller, D. (2013). How many countries for multilevel modeling? A comparison of Frequentist and Bayesian approaches. *American Journal of Political Science*, 57(3), pp. 748–761. https://doi.org/10.1111/ajps.12001

Stock, J.H., and M. Yogo. 2005. Testing for Weak Instruments in Linear IV Regression. Identification and inference for econometric models. In D. W. K. Andrews, & J.H. Stock (Eds.), *Identification and Inference for Econometric Models*, Chapter 5, pp. 80–108. Cambridge University Press. https://doi.org/10.1017/cbo9780511614491

Su, T., Yu, Y., Chen, Y., & Zhang, J. (2019). The Experience, dilemma, and solutions of Sustainable development of inclusive finance in Rural China: Based on the Perspective of Synergy. *Sustainability*, 11(21), 5984, pp. 1-18. https://doi.org/10.3390/su11215984

Sugiyama, N. B., & Hunter, W. (2020). Do Conditional Cash Transfers Empower Women? Insights from Brazil's Bolsa Família. *Latin American Politics and Society*, 62(2), pp. 53–74. https://doi.org/10.1017/lap.2019.60

Swamy, V. (2014). Financial inclusion, gender dimension, and economic impact on poor households. *World Development*, 56, pp. 1–15. https://doi.org/10.1016/j.worlddev.2013.10.019

Tahir, M. S., Shahid, A. U., & Richards, D. W. (2022). The role of impulsivity and financial satisfaction in a moderated mediation model of consumer financial resilience and life satisfaction. *International Journal of Bank Marketing*, 40(4), pp. 773–790. https://doi.org/10.1108/ijbm-09-2021-0407

Tallis, F., Eysenck, M., & Mathews, A. (1991). Elevated evidence requirements and worry. *Personality and Individual Differences*, 12(1), pp. 21–27. https://doi.org/10.1016/0191-8869(91)90128-x

Tallis, F., Eysenck, M., & Mathews, A. (1992). A questionnaire for the measurement of nonpathological worry. *Personality and individual differences*, 13(2), pp. 161-168. https://doi.org/10.1016/0191-8869(92)90038-Q

Tay, L., Batz, C., Parrigon, S., & Kuykendall, L. (2017). Debt and subjective well-being: the other side of the Income-Happiness coin. *Journal of Happiness Studies*, 18(3), pp. 903–937. https://doi.org/10.1007/s10902-016-9758-5

Taylor, M. P., Jenkins, S. P., & Sacker, A. (2011). Financial capability and psychological health. *Journal of economic psychology*, 32(5), pp. 710-723. https://doi.org/10.1016/j.joep.2011.05.006

Tinta, A. A., Ouédraogo, I. M., & Al-Hassan, R. M. (2022). The micro determinants of financial inclusion and financial resilience in Africa. *African Development Review*, 34(2), pp. 293–306. https://doi.org/10.1111/1467-8268.12636

Tran, A. G., Lam, C. K., & Legg, E. (2018). Financial stress, social supports, gender, and anxiety during college: A stress-buffering perspective. *The Counseling Psychologist*, 46(7), pp. 846-869. https://doi.org/10.1177/0011000018806687

Trung, N. N., Cheong, K., Nghi, P. T., & Kim, W. J. (2013). Relationship between Socio-Economic Values and Wellbeing: An Overview Research in Asia. *Social Indicators Research*, 111(2), pp. 453–472. https://doi.org/10.1007/s11205-012-0014-z

Turiansky, A., Lipman, E., Mamun, A., Seaton, C., Gellar, J., & Hughes, S. (2021). Financial Inclusion and Resilience to COVID-19 Economic Shocks: Evidence from Kenya, Nigeria, and Uganda. *Mathematica Policy Research.*

Uddin, M. (2021). Addressing work-life balance challenges of working women during COVID-19 in Bangladesh. *International Social Science Journal*, 71(239–240), pp. 7–20. https://doi.org/10.1111/issj.12267

Ullah, I., & Khan, M. (2017). Microfinance as a tool for developing resilience in vulnerable communities. *Journal of Enterprising Communities People and Places in the Global Economy*, 11(2), pp. 237–257. https://doi.org/10.1108/jec-06-2015-0033

UNESCO. (2025). Global Education Monitoring Report: Gender Report - Women Lead for Learning, *United Nations Educational, Scientific and Cultural Organization*, pp. 1-60. https://www.unesco.org/gem-report/en/publication/2025-gender-report (accessed November 30, 2025)

Utz, S., & Maaß, C. H. (2018). Understanding the relationship between Facebook use and adaptation to financial hardship: Evidence from a longitudinal panel study. *Computers in Human Behavior*, 89, pp. 221–229. https://doi.org/10.1016/j.chb.2018.08.021

Van Raaij, W. F., Riitsalu, L., & Poder, K. (2023). Direct and indirect effects of self-control and future time perspective on financial well-being. *Journal of Economic Psychology*, 99, 102667, pp. 1-16. https://doi.org/10.1016/j.joep.2023.102667

Van, L. T., Vo, A., Nguyen, N. T., & Vo, D. H. (2019). Financial inclusion and economic growth: An international evidence. *Emerging Markets Finance and Trade*, 57(1), pp. 239–263. https://doi.org/10.1080/1540496x.2019.1697672

Vlaev, I., & Elliott, A. (2014). Financial Well-Being components. *Social Indicators Research*, 118(3), pp. 1103–1123. https://doi.org/10.1007/s11205-013-0462-0

Weissman, J., Russell, D., & Mann, J. J. (2020). Sociodemographic characteristics, financial worries and serious psychological distress in US adults. *Community Mental Health Journal*, 56(4), pp. 606-613. https://doi.org/10.1007/s10597-019-00519-0

World Economic Forum (WEF). (2024). Global Gender Gap 2024: Insight Report. *World Economic Forum,* pp. 1-385. https://www3.weforum.org/docs/WEF_GGGR_2024.pdf (accessed November 30, 2025)

Wu, B., Wang, L., & Yao, L. (2023). A Mechanistic Study of the Impact of Digital Payments on Rural Household Development Resilience. *Sustainability*, 15(14), 11203, pp. 1-20. https://doi.org/10.3390/su151411203

Xiao, J. J., & Kim, K. T. (2022). The able worry more? Debt delinquency, financial capability, and financial stress. *Journal of Family and Economic Issues*, 43(1), pp. 138-152. https://doi.org/10.1007/s10834-021-09767-3

Xiao, J. J., & O'Neill, B. (2018). Propensity to plan, financial capability, and financial satisfaction. International Journal of Consumer Studies, 42(5), pp. 501–512. https://doi.org/10.1111/ijcs.12461

Xiao, J. J., Chen, C., & Chen, F. (2014). Consumer financial capability and financial satisfaction. *Social Indicators Research*, 118(1), pp. 415–432. https://doi.org/10.1007/s11205-013-0414-8

Xiao, J. J., Sorhaindo, B., & Garman, E. T. (2006). Financial behaviours of consumers in credit counselling. *International Journal of Consumer Studies*, 30(2), pp. 108–121. https://doi.org/10.1111/j.1470-6431.2005.00455.x

Yadav, P., & Shaikh, I. (2023). Measuring financial resilience with consumer sentiment data from India. *International Journal of Bank Marketing*, 41(5), pp. 1083–1103. https://doi.org/10.1108/ijbm-07-2022-0325

Yang, X., Huang, Y., & Gao, M. (2022). Can digital financial inclusion promote female entrepreneurship? Evidence and mechanisms. *The North American Journal of Economics and Finance*, 63, 101800, pp. 1-16. https://doi.org/10.1016/j.najef.2022.101800

Yao, R., & Zhang, J. (2023). Employment status and financial resilience during the COVID-19 pandemic. International *Journal of Bank Marketing*, 41(5), pp. 992–1009. https://doi.org/10.1108/ijbm-08-2022-0371

Zeka, B., & Alhassan, A. L. (2024). Gender disparities in financial resilience: insights from South Africa. International Journal of Bank Marketing, 42(6), pp. 1212–1231. https://doi.org/10.1108/ijbm-01-2023-0053

Zhang, Q., & Posso, A. (2019). Thinking inside the box: a closer look at financial inclusion and household income. *The Journal of Development Studies*, 55(7), pp. 1616–1631. https://doi.org/10.1080/00220388.2017.1380798

Zhao, T., & Jiao, F. (2024). Does digital financial inclusion promote common prosperity? The role of regional innovation. *Electronic Commerce Research*, 25(5), pp. 3451–3476. https://doi.org/10.1007/s10660-023-09797-z

Zimmerman, S. (1995). *Understanding family policy: Theories and applications (2nd ed.)*. Thousand Oaks, CA: Sage.

Zumbyte, I. (2023). Support matters: How formal and informal institutions shape young Indians' work-family preferences. *Journal of Marriage and the Family*, 86(3), pp. 593–613. https://doi.org/10.1111/jomf.12958

Appendix

Table 1.1.1: List of the data sources used

1. **Global Findex Database 2021** (utilized in: Chapter 1, 2, and 3)

   Accessible at: https://doi.org/10.48529/jq97-aj70

2. **Global Findex Database 2014** (utilized in: Chapter 2)

   Accessible at: https://doi.org/10.48529/wnvd-y919

3. **Classification of Emerging Market Economies:** (utilized in: Chapter 1, and 2)

   Accessible at: https://www.imf.org/external/pubs/ft/fandd/2021/06/the-future-of-emerging-markets-duttagupta-and-pazarbasioglu.htm

4. **World Development Indicators:** (utilized in: Chapter 1, and 3)

   Accessible at: https://datatopics.worldbank.org/world-development-indicators/

5. **Global System for Mobile Communications (GSMA) Mobile Connectivity Index**

   (utilized in: Chapter 2)

   Accessible at: https://www.mobileconnectivityindex.com/index.html

6. **Hofstede's dimensions of national culture** (utilized in: Chapter 3)

   Accessible at: Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). Cultures and organizations: Software of the mind (3rd ed.). New York: McGraw-Hill.

7. **World value survey** (utilized in: Chapter 4)

   Accessible at: https://doi.org/10.14281/18241.24

Table 1.2.1: Financial Resilience – OLS regression and DAM approach

	OLS			DAM_U			DAM_L		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Savings	0.477	0.035	***	0.360	0.041	***	0.464	0.033	***
Emergency Fund: Through Work	0.202	0.034	***	0.209	0.041	***	0.139	0.031	***
Emergency Fund: Family & Friends	0.092	0.033	**	0.128	0.040	**	0.033	0.030	
Emergency Fund: Bank or Pvt Lender	0.079	0.039	*	0.080	0.046	.	0.057	0.036	
Formal Savings	0.252	0.015	***	0.206	0.015	***	0.229	0.017	***
Formal Borrowing	0.086	0.014	***	0.059	0.015	***	0.089	0.016	***
Informal Savings	0.102	0.021	***	0.137	0.023	***	0.039	0.023	.
Informal Borrowing	-0.203	0.014	***	-0.158	0.016	***	-0.191	0.014	***
Male	0.120	0.012	***	0.122	0.013	***	0.085	0.012	***
Age: 31 - 48	0.081	0.014	***	0.021	0.015		0.118	0.014	***
Age: 49 - 65	0.102	0.017	***	0.007	0.020		0.168	0.018	***
Age: 66 - Above	0.175	0.034	***	0.045	0.035		0.255	0.035	***
Education: Secondary	0.121	0.017	***	0.163	0.020	***	0.046	0.016	**
Education: Tertiary	0.281	0.021	***	0.282	0.023	***	0.204	0.022	***
Income Quintile: 2	0.115	0.021	***	0.147	0.026	***	0.052	0.019	**
Income Quintile: 3	0.223	0.021	***	0.271	0.025	***	0.114	0.020	***
Income Quintile: 4	0.364	0.020	***	0.425	0.024	***	0.206	0.020	***
Income Quintile: 5	0.573	0.021	***	0.574	0.024	***	0.417	0.021	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept	-0.821	0.048	***	-0.749	0.055	***	-0.670	0.048	***
R-squared	0.434			0.290			0.387		
Observations	16651			16651			16651		

OLS, DAM_U, and **DAM_L** represent the results of **OLS Regression**, **DAM Upper**, and **DAM Lower** models, respectively. Following Bloem & Oswald (2021), the dependent variable in all three cases, i.e., **OLS**, **DAM-U**, and **DAM-L**, is standardized to have a mean of zero and a standard deviation of one. **Emergency Fund:** "Asset Sales" was used as a reference category; **Gender:** "Female" was used as a reference category; **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE**: Standard Errors (robust); **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.2.2: Financial Resilience – Subsamples (income, education, and gender)

	INC			EDU			GEN		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Savings	0.778	0.076	***	0.738	0.116	***	0.748	0.084	***
Emergency Fund: Through Work	0.289	0.074	***	0.243	0.110	*	0.230	0.084	**
Emergency Fund: Family & Friends	0.206	0.071	**	0.098	0.106		0.162	0.080	*
Emergency Fund: Bank or Pvt Lender	0.151	0.081	.	0.050	0.123		0.095	0.089	
Formal Savings	0.380	0.036	***	0.400	0.060	***	0.328	0.035	***
Formal Borrowing	0.154	0.035	***	0.128	0.058	*	0.179	0.034	***
Informal Savings	0.189	0.053	***	0.138	0.078	.	0.173	0.047	***
Informal Borrowing	-0.360	0.030	***	-0.331	0.047	***	-0.320	0.031	***
Male	0.165	0.028	***	0.185	0.043	***			
Age: 31 - 48	0.092	0.032	**	-0.029	0.057		0.030	0.032	
Age: 49 - 65	0.075	0.041	.	-0.114	0.061	.	0.073	0.041	.
Age: 66 - Above	0.201	0.071	**	-0.031	0.088		0.178	0.066	**
Education: Secondary	0.189	0.035	***				0.179	0.039	***
Education: Tertiary	0.489	0.047	***				0.434	0.047	***
Income Quintile: 2	0.192	0.035	***	0.219	0.062	***	0.164	0.048	***
Income Quintile: 3	0.366	0.035	***	0.398	0.064	***	0.384	0.047	***
Income Quintile: 4				0.644	0.066	***	0.566	0.046	***
Income Quintile: 5				0.947	0.073	***	0.893	0.049	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept 1|2	0.620	0.103	***	0.312	0.169	.	0.538	0.113	***
Intercept 2|3	1.892	0.105	***	1.397	0.170	***	1.868	0.115	***
AIC	13349			5817			13401		
Observations	8209			3605			8317		

INC, EDU, and **GEN** represent the results of ordinal probit models for the subsamples based on **income** (quintile 1, 2, and 3), **education** (primary and below), and **gender** (female only) respectively. **Emergency Fund:** "Asset Sales" was used as a reference category; **Gender:** "Female" was used as a reference category (not applicable for model "**GEN**"); **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level (not applicable for model "**EDU**"); **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.3.1: Financial Worry (medical expenses) – OLS regression and DAM approach

	OLS			DAM_U			DAM_L		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.124	0.021	***	0.078	0.024	**	0.132	0.020	***
Emergency Fund: Family & Friends	0.219	0.021	***	0.150	0.023	***	0.222	0.021	***
Emergency Fund: No Source	0.247	0.034	***	0.119	0.034	***	0.294	0.033	***
Emergency Fund: Asset Sale	0.285	0.039	***	0.171	0.038	***	0.310	0.040	***
Emergency Fund: Bank or Pvt Lender	0.310	0.029	***	0.204	0.030	***	0.323	0.029	***
Formal Savings	-0.126	0.018	***	-0.057	0.019	**	-0.153	0.017	***
Formal Borrowing	0.049	0.017	**	0.045	0.018	*	0.040	0.016	*
Informal Savings	-0.059	0.025	*	-0.063	0.027	*	-0.041	0.025	.
Informal Borrowing	0.294	0.015	***	0.242	0.015	***	0.266	0.016	***
Male	-0.109	0.014	***	-0.099	0.014	***	-0.091	0.014	***
Age: 31 - 48	0.043	0.016	**	0.025	0.017		0.047	0.016	**
Age: 49 - 65	0.014	0.020		-0.029	0.021		0.047	0.020	*
Age: 66 - Above	-0.229	0.036	***	-0.291	0.040	***	-0.123	0.034	***
Education: Secondary	-0.106	0.019	***	-0.065	0.019	***	-0.114	0.019	***
Education: Tertiary	-0.203	0.024	***	-0.148	0.025	***	-0.200	0.023	***
Income Quintile: 2	-0.024	0.023		0.020	0.022		-0.055	0.024	*
Income Quintile: 3	-0.125	0.023	***	-0.051	0.022	*	-0.155	0.024	***
Income Quintile: 4	-0.227	0.023	***	-0.124	0.023	***	-0.258	0.023	***
Income Quintile: 5	-0.442	0.024	***	-0.311	0.024	***	-0.443	0.024	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept	0.007	0.046		0.017	0.048		-0.003	0.045	
R-squared	0.196			0.117			0.189		
Observations	17750			17750			17750		

OLS, DAM_U, and **DAM_L** represent the results of **OLS Regression**, **DAM Upper**, and **DAM Lower** models, respectively. Following Bloem & Oswald (2021), the dependent variable in all three cases, i.e., **OLS**, **DAM-U**, and **DAM-L**, is standardized to have a mean of zero and a standard deviation of one. **Emergency Fund:** "Savings" was used as a reference category; **Gender:** "Female" was used as a reference category; **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors (robust); **Significance level: .** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.3.2: Financial Worry (medical expenses) – Subsamples (income, education, and gender)

	INC			EDU			GEN		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.172	0.042	***	0.194	0.068	**	0.109	0.040	**
Emergency Fund: Family & Friends	0.307	0.041	***	0.297	0.065	***	0.249	0.037	***
Emergency Fund: No Source	0.280	0.058	***	0.294	0.080	***	0.319	0.062	***
Emergency Fund: Asset Sale	0.369	0.075	***	0.377	0.116	**	0.384	0.084	***
Emergency Fund: Bank or Pvt Lender	0.443	0.058	***	0.425	0.091	***	0.408	0.055	***
Formal Savings	-0.204	0.035	***	-0.197	0.058	***	-0.170	0.032	***
Formal Borrowing	0.066	0.033	*	-0.043	0.055		0.070	0.032	*
Informal Savings	-0.106	0.052	*	-0.049	0.077		-0.095	0.045	*
Informal Borrowing	0.389	0.029	***	0.404	0.045	***	0.372	0.030	***
Male	-0.121	0.026	***	-0.072	0.040	.			
Age: 31 - 48	0.135	0.031	***	0.127	0.054	*	0.059	0.030	*
Age: 49 - 65	0.054	0.038		0.009	0.056		-0.017	0.038	
Age: 66 - Above	-0.304	0.064	***	-0.318	0.078	***	-0.281	0.060	***
Education: Secondary	-0.138	0.033	***				-0.112	0.037	**
Education: Tertiary	-0.243	0.045	***				-0.211	0.044	***
Income Quintile: 2	-0.049	0.033		-0.079	0.057		-0.005	0.045	
Income Quintile: 3	-0.183	0.033	***	-0.246	0.059	***	-0.155	0.044	***
Income Quintile: 4				-0.419	0.062	***	-0.254	0.043	***
Income Quintile: 5				-0.650	0.067	***	-0.557	0.045	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept 1|2	-0.793	0.084	***	-0.821	0.143	***	-0.877	0.086	***
Intercept 2|3	0.131	0.084		-0.035	0.143		0.112	0.085	
AIC	15783			6963			16413		
Observations	9048			4167			8971		

INC, EDU, and **GEN** represent the results of ordinal probit models for the subsamples based on **income** (quintile 1, 2, and 3), **education** (primary and below), and **gender** (female only) respectively. **Emergency Fund:** "Savings" was used as a reference category; **Gender:** "Female" was used as a reference category (not applicable for model "**GEN**"); **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level (not applicable for model "**EDU**"); **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.4.1: Financial Worry (monthly expenses and bills) – OLS regression and DAM approach

	OLS			DAM_U			DAM_L		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.138	0.019	***	0.137	0.022	***	0.104	0.018	***
Emergency Fund: Family & Friends	0.251	0.020	***	0.253	0.022	***	0.183	0.020	***
Emergency Fund: Asset Sale	0.327	0.038	***	0.272	0.037	***	0.295	0.041	***
Emergency Fund: Bank or Pvt Lender	0.343	0.032	***	0.237	0.032	***	0.357	0.034	***
Emergency Fund: No Source	0.371	0.027	***	0.340	0.028	***	0.303	0.029	***
Formal Savings	-0.197	0.016	***	-0.174	0.018	***	-0.168	0.016	***
Formal Borrowing	0.063	0.015	***	0.072	0.017	***	0.039	0.015	*
Informal Savings	-0.071	0.023	**	-0.034	0.025		-0.089	0.024	***
Informal Borrowing	0.288	0.014	***	0.278	0.014	***	0.221	0.016	***
Male	-0.074	0.013	***	-0.062	0.014	***	-0.065	0.013	***
Age: 31 - 48	0.051	0.015	***	0.039	0.016	*	0.050	0.015	**
Age: 49 - 65	0.030	0.019		0.000	0.020		0.052	0.020	**
Age: 66 - Above	-0.253	0.034	***	-0.265	0.037	***	-0.175	0.032	***
Education: Secondary	-0.157	0.018	***	-0.089	0.017	***	-0.182	0.020	***
Education: Tertiary	-0.294	0.022	***	-0.239	0.023	***	-0.270	0.023	***
Income Quintile: 2	-0.102	0.022	***	-0.027	0.020		-0.149	0.025	***
Income Quintile: 3	-0.228	0.022	***	-0.126	0.021	***	-0.268	0.024	***
Income Quintile: 4	-0.369	0.022	***	-0.231	0.021	***	-0.408	0.024	***
Income Quintile: 5	-0.580	0.023	***	-0.457	0.023	***	-0.548	0.024	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept	0.192	0.042	***	0.131	0.045	**	0.202	0.044	***
R-squared	0.292			0.217			0.242		
Observations	17754			17754			17754		

OLS, DAM_U, and **DAM_L** represent the results of **OLS Regression**, **DAM Upper**, and **DAM Lower** models, respectively. Following Bloem & Oswald (2021), the dependent variable in all three cases, i.e., **OLS**, **DAM-U**, and **DAM-L**, is standardized to have a mean of zero and a standard deviation of one. **Emergency Fund:** "Savings" was used as a reference category; **Gender:** "Female" was used as a reference category; **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors (robust); **Significance level: .** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 1.4.2: Financial Worry (monthly expenses and bills) – Subsamples (income, education, and gender)

	INC			EDU			GEN		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Emergency Fund: Through Work	0.212	0.042	***	0.196	0.067	**	0.159	0.041	***
Emergency Fund: Family & Friends	0.328	0.041	***	0.383	0.064	***	0.314	0.038	***
Emergency Fund: No Source	0.420	0.058	***	0.401	0.079	***	0.492	0.062	***
Emergency Fund: Bank or Pvt Lender	0.449	0.056	***	0.450	0.088	***	0.443	0.053	***
Emergency Fund: Asset Sale	0.464	0.074	***	0.395	0.113	***	0.528	0.081	***
Formal Savings	-0.276	0.034	***	-0.206	0.057	***	-0.257	0.033	***
Formal Borrowing	0.085	0.033	**	0.056	0.054		0.124	0.032	***
Informal Savings	-0.119	0.050	*	-0.134	0.075	.	-0.115	0.045	**
Informal Borrowing	0.361	0.028	***	0.347	0.043	***	0.366	0.029	***
Male	-0.081	0.026	**	-0.086	0.039	*			
Age: 31 - 48	0.127	0.030	***	0.038	0.053		0.092	0.030	**
Age: 49 - 65	0.078	0.038	*	-0.029	0.055		0.065	0.038	.
Age: 66 - Above	-0.436	0.063	***	-0.436	0.077	***	-0.290	0.060	***
Education: Secondary	-0.211	0.032	***				-0.213	0.036	***
Education: Tertiary	-0.399	0.044	***				-0.400	0.044	***
Income Quintile: 2	-0.160	0.032	***	-0.202	0.055	***	-0.125	0.043	**
Income Quintile: 3	-0.332	0.032	***	-0.367	0.058	***	-0.287	0.043	***
Income Quintile: 4				-0.605	0.060	***	-0.462	0.042	***
Income Quintile: 5				-0.834	0.067	***	-0.773	0.045	***
Country Fixed Effects		Yes			Yes			Yes	
Intercept 1|2	-0.803	0.083	***	-0.830	0.139	***	-0.830	0.085	***
Intercept 2|3	0.245	0.082	**	0.068	0.139		0.258	0.085	**
AIC	16468			7327			16487		
Observations	9054			4170			8970		

INC, EDU, and **GEN** represent the results of ordinal probit models for the subsamples based on income (quintile 1, 2, and 3), education (primary and below), and gender (female only) respectively. **Emergency Fund:** "Savings" was used as a reference category; **Gender:** "Female" was used as a reference category (not applicable for model "**GEN**"); **Age:** "15-30" was used as reference category; **Education:** "Primary or less" was used as a reference category for the education level (not applicable for model "**EDU**"); **Income Quintile:** "1" was used as a reference category for income level; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$

Table 3.2.1: Financial Resilience – Estimates with the inclusion of additional country level covariates

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1			M2			M3			M4			M5		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Male	0.166	0.009	***	0.166	0.009	***	0.168	0.009	***	0.168	0.009	***	0.173	0.010	***
Age: 33-48	0.094	0.012	***	0.095	0.012	***	0.090	0.012	***	0.090	0.012	***	0.089	0.012	***
Age: 49-65	0.074	0.013	***	0.074	0.013	***	0.065	0.013	***	0.065	0.013	***	0.066	0.013	***
Age: 66-above	0.176	0.017	***	0.176	0.017	***	0.167	0.017	***	0.168	0.017	***	0.168	0.017	***
Education: Secondary School	0.317	0.014	***	0.317	0.014	***	0.316	0.013	***	0.316	0.013	***	0.317	0.014	***
Education: Tertiary and above	0.570	0.017	***	0.570	0.017	***	0.566	0.016	***	0.567	0.016	***	0.569	0.017	***
Income: Quintile 2	0.227	0.016	***	0.227	0.016	***	0.229	0.016	***	0.229	0.016	***	0.227	0.016	***
Income: Quintile 3	0.379	0.015	***	0.379	0.015	***	0.380	0.015	***	0.379	0.015	***	0.383	0.016	***
Income: Quintile 4	0.551	0.015	***	0.551	0.015	***	0.551	0.015	***	0.551	0.015	***	0.555	0.016	***
Income: Quintile 5	0.812	0.016	***	0.811	0.016	***	0.815	0.016	***	0.814	0.016	***	0.814	0.016	***
Formal Saving	0.517	0.011	***	0.518	0.011	***	0.516	0.011	***	0.516	0.011	***	0.518	0.011	***
Formal Borrowing	0.137	0.011	***	0.137	0.011	***	0.138	0.011	***	0.138	0.011	***	0.134	0.011	***
Power Distance	-0.037	0.061		-0.063	0.064		-0.037	0.057		-0.050	0.063		-0.062	0.061	
Masculinity	-0.086	0.044	.	-0.089	0.046	.	-0.090	0.040	*	-0.084	0.044	.	-0.079	0.044	.
Individualism	0.183	0.062	**	0.226	0.063	***	0.131	0.059	*	0.194	0.062	**	0.173	0.063	**
Uncertainty Avoidance	-0.008	0.045		-0.015	0.050		-0.074	0.043	.	-0.044	0.047		-0.032	0.048	
Long-term Orientation	0.119	0.046	*	0.145	0.046	**	0.094	0.042	*	0.145	0.045	**	0.109	0.048	*
GDP per capita (PPP)	0.108	0.057	.												
GDP growth rate				0.024	0.048										
Universal Health Care							0.202	0.049	***						
Urbanization										0.089	0.050	.			
GINI Coefficient													-0.119	0.048	*

(continued on next page)

Table 3.2.1: (continued)

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1		M2		M3		M4		M5	
	β	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**
Intercept 0|1	-0.814	0.046	-0.818	0.048	-0.842	0.043	-0.837	0.047	-0.832	0.047
Intercept 1|2	0.378	0.046	0.374	0.048	0.363	0.043	0.369	0.047	0.371	0.047
Intercept 2|3	1.385	0.046	1.381	0.048	1.375	0.043	1.380	0.047	1.375	0.047
Variance: Country	0.111		0.117		0.091		0.112		0.109	
ICC	0.100		0.341		0.083		0.101		0.098	
Pseudo R Square (AIC)	125609		125612		127815		127827		123361	
Observations	63438		63438		64429		64429		62478	
Countries	61		61		62		62		60	

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.2.2: Financial Resilience - Estimates for the subsamples based on income, education, and gender

M1: Income based subsample (Bottom 60%: Quintile 1, 2, and 3 only); **M2:** Education based subsample (Primary or less only); **M3:** Gender based subsample (Female only)

	M1			M2			M3		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Male	0.160	0.013	***	0.234	0.021	***			
Age: 33-48	0.045	0.016	**	-0.020	0.027		0.042	0.017	*
Age: 49-65	-0.001	0.018		-0.155	0.029	***	0.005	0.018	
Age: 66-above	0.101	0.022	***	-0.154	0.037	***	0.112	0.023	***
Education: Secondary School	0.314	0.017	***				0.362	0.019	***
Education: Tertiary and above	0.573	0.022	***				0.618	0.023	***
Income: Quintile 2	0.233	0.016	***	0.301	0.029	***	0.229	0.021	***
Income: Quintile 3	0.381	0.016	***	0.395	0.031	***	0.367	0.021	***
Income: Quintile 4				0.560	0.032	***	0.541	0.021	***
Income: Quintile 5				0.807	0.036	***	0.810	0.022	***
Formal Saving	0.535	0.015	***	0.562	0.031	***	0.519	0.016	***
Formal Borrowing	0.144	0.015	***	0.157	0.030	***	0.094	0.015	***
Power Distance	-0.095	0.063		-0.127	0.075	.	-0.090	0.066	
Masculinity	-0.055	0.045		0.002	0.054		-0.074	0.047	
Individualism	0.193	0.062	**	0.158	0.072	*	0.208	0.064	**
Uncertainty Avoidance	-0.034	0.047		-0.034	0.054		-0.052	0.048	
Long-term Orientation	0.150	0.046	**	0.120	0.053	*	0.168	0.048	***
Intercept 0|1	-0.908	0.049		-0.942	0.059		-0.904	0.052	
Intercept 1|2	0.363	0.049		0.398	0.059		0.346	0.052	
Intercept 2|3	1.342	0.049		1.293	0.060		1.376	0.052	
Variance: Country	0.116			0.141			0.124		
ICC	0.100			0.124			0.111		
Pseudo R Square (AIC)	72511			26932			66988		
Observations	33442			11428			32797		
Countries	62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.3.1: Financial Worry (medical expenses) – Estimates with the inclusion of additional country level covariates

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1			M2			M3			M4			M5		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Male	-0.167	0.009	***	-0.167	0.009	***	-0.167	0.009	***	-0.168	0.009	***	-0.168	0.010	***
Age: 33-48	0.116	0.012	***	0.115	0.012	***	0.121	0.012	***	0.121	0.012	***	0.112	0.012	***
Age: 49-65	0.131	0.013	***	0.130	0.013	***	0.135	0.013	***	0.134	0.013	***	0.128	0.013	***
Age: 66-above	-0.124	0.017	***	-0.124	0.017	***	-0.119	0.017	***	-0.120	0.017	***	-0.130	0.017	***
Education: Secondary School	-0.101	0.014	***	-0.102	0.014	***	-0.100	0.014	***	-0.101	0.014	***	-0.104	0.015	***
Education: Tertiary and above	-0.243	0.017	***	-0.244	0.017	***	-0.239	0.017	***	-0.240	0.017	***	-0.245	0.017	***
Income: Quintile 2	-0.108	0.016	***	-0.108	0.016	***	-0.108	0.016	***	-0.108	0.016	***	-0.110	0.017	***
Income: Quintile 3	-0.227	0.016	***	-0.227	0.016	***	-0.225	0.016	***	-0.224	0.016	***	-0.229	0.016	***
Income: Quintile 4	-0.348	0.016	***	-0.347	0.016	***	-0.346	0.016	***	-0.346	0.016	***	-0.350	0.016	***
Income: Quintile 5	-0.568	0.016	***	-0.568	0.016	***	-0.569	0.016	***	-0.568	0.016	***	-0.571	0.016	***
Formal Saving	-0.231	0.011	***	-0.232	0.011	***	-0.233	0.011	***	-0.233	0.011	***	-0.237	0.011	***
Formal Borrowing	0.041	0.011	***	0.041	0.011	***	0.040	0.011	***	0.039	0.011	***	0.043	0.011	***
Power Distance	0.120	0.058	*	0.175	0.065	**	0.138	0.054	*	0.151	0.061	*	0.169	0.061	**
Masculinity	0.107	0.041	**	0.121	0.047	**	0.121	0.038	**	0.115	0.043	**	0.107	0.045	*
Individualism	-0.237	0.060	***	-0.308	0.066	***	-0.213	0.056	***	-0.284	0.061	***	-0.272	0.065	***
Uncertainty Avoidance	0.006	0.043		0.053	0.051		0.095	0.041	*	0.062	0.046		0.037	0.049	
Long-term Orientation	-0.080	0.044	.	-0.136	0.046	**	-0.075	0.041	.	-0.134	0.044	**	-0.094	0.049	.
GDP per capita (PPP)	-0.209	0.054	***												
GDP growth rate				0.039	0.049										
Universal Health Care							-0.233	0.047	***						
Urbanization										-0.110	0.049	*			
GINI Coefficient													0.109	0.049	*

(continued on next page)

Table 3.3.1: (continued)

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1		**M2**		**M3**		**M4**		**M5**	
	β	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**
Intercept 0|1	-1.00	0.04	-0.989	0.048	-0.981	0.042	-0.988	0.046	-0.992	0.048
Intercept 1|2	-0.01	0.04	-0.003	0.048	0.005	0.042	-0.002	0.046	-0.015	0.048
Variance: Country	0.095		0.117		0.084		0.108		0.111	
ICC	0.087		0.105		0.077		0.097		0.100	
Pseudo R Square (AIC)	120611		120624		122156		122172		118556	
Observations	64687		64687		65686		65686		63716	
Countries	61		61		62		62		60	

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.3.2: Financial Worry (medical expenses) – Estimates for the subsamples based on income, education, and gender

M1: Income based subsample (Bottom 60%: Quintile 1, 2, and 3 only); **M2:** Education based subsample (Primary or less only); **M3:** Gender based subsample (Female only)

	M1			M2			M3		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Male	-0.165	0.013	***	-0.099	0.023	***			
Age: 33-48	0.174	0.017	***	0.191	0.030	***	0.125	0.017	***
Age: 49-65	0.178	0.019	***	0.111	0.032	***	0.135	0.019	***
Age: 66-above	-0.070	0.023	**	-0.087	0.039	*	-0.143	0.023	***
Education: Secondary School	-0.078	0.018	***				-0.084	0.020	***
Education: Tertiary and above	-0.246	0.023	***				-0.225	0.024	***
Income: Quintile 2	-0.110	0.016	***	-0.119	0.033	***	-0.095	0.022	***
Income: Quintile 3	-0.224	0.016	***	-0.244	0.034	***	-0.212	0.022	***
Income: Quintile 4				-0.380	0.035	***	-0.343	0.022	***
Income: Quintile 5				-0.576	0.038	***	-0.555	0.022	***
Formal Saving	-0.241	0.016	***	-0.240	0.032	***	-0.224	0.015	***
Formal Borrowing	0.034	0.016	*	0.107	0.032	***	0.048	0.016	**
Power Distance	0.186	0.065	**	0.162	0.063	*	0.199	0.066	**
Masculinity	0.105	0.047	*	0.098	0.046	*	0.096	0.047	*
Individualism	-0.313	0.064	***	-0.312	0.061	***	-0.290	0.065	***
Uncertainty Avoidance	0.033	0.050		0.047	0.046		0.064	0.048	
Long-term Orientation	-0.146	0.048	**	-0.153	0.044	***	-0.125	0.048	**
Intercept 0|1	-0.920	0.051		-0.821	0.053		-0.962	0.052	
Intercept 1|2	0.032	0.050		-0.054	0.053		0.033	0.052	
Variance: Country	0.125			0.093			0.125		
ICC	0.111			0.085			0.111		
Pseudo R Square (AIC)	63043			21446			33626		
Observations	34304			11999			62520		
Countries	62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.4.1: Financial Worry (monthly expenses and bills) – Estimates with the inclusion of additional country level covariates

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1			M2			M3			M4			M5		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Male	-0.139	0.010	***	-0.139	0.010	***	-0.140	0.010	***	-0.140	0.010	***	-0.142	0.010	***
Age: 33-48	0.093	0.012	***	0.093	0.012	***	0.099	0.012	***	0.099	0.012	***	0.088	0.012	***
Age: 49-65	0.097	0.014	***	0.096	0.014	***	0.105	0.014	***	0.104	0.014	***	0.095	0.014	***
Age: 66-above	-0.239	0.018	***	-0.239	0.018	***	-0.230	0.017	***	-0.231	0.017	***	-0.242	0.018	***
Education: Secondary School	-0.180	0.014	***	-0.181	0.014	***	-0.181	0.014	***	-0.181	0.014	***	-0.183	0.014	***
Education: Tertiary and above	-0.385	0.017	***	-0.386	0.017	***	-0.381	0.017	***	-0.382	0.017	***	-0.388	0.017	***
Income: Quintile 2	-0.170	0.016	***	-0.170	0.016	***	-0.171	0.016	***	-0.171	0.016	***	-0.178	0.017	***
Income: Quintile 3	-0.315	0.016	***	-0.315	0.016	***	-0.314	0.016	***	-0.314	0.016	***	-0.322	0.016	***
Income: Quintile 4	-0.460	0.016	***	-0.459	0.016	***	-0.460	0.016	***	-0.460	0.016	***	-0.469	0.016	***
Income: Quintile 5	-0.692	0.016	***	-0.691	0.016	***	-0.694	0.016	***	-0.693	0.016	***	-0.701	0.016	***
Formal Saving	-0.337	0.011	***	-0.338	0.011	***	-0.337	0.011	***	-0.338	0.011	***	-0.345	0.011	***
Formal Borrowing	0.058	0.011	***	0.058	0.011	***	0.057	0.011	***	0.056	0.011	***	0.062	0.011	***
Power Distance	0.107	0.057	.	0.142	0.059	*	0.117	0.052	*	0.133	0.058	*	0.142	0.057	*
Masculinity	0.092	0.040	*	0.099	0.042	*	0.099	0.036	**	0.094	0.041	*	0.091	0.042	*
Individualism	-0.241	0.058	***	-0.298	0.058	***	-0.207	0.054	***	-0.273	0.058	***	-0.255	0.060	***
Uncertainty Avoidance	-0.018	0.041		-0.002	0.047		0.052	0.039		0.019	0.044		0.012	0.046	
Long-term Orientation	-0.132	0.042	**	-0.169	0.043	***	-0.118	0.039	**	-0.167	0.042	***	-0.140	0.046	**
GDP per capita (PPP)	-0.147	0.052	**												
GDP growth rate				-0.015	0.045										
Universal Health Care							-0.193	0.044	***						
Urbanization										-0.067	0.046				
GINI Coefficient													0.091	0.046	*

(continued on next page)

Table 3.4.1: (continued)

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1		M2		M3		M4		M5	
	β	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**
Intercept 0|1	-0.833	0.043	-0.828	0.045	-0.819	0.040	-0.824	0.044	-0.836	0.045
Intercept 1|2	0.145	0.043	0.150	0.045	0.161	0.040	0.156	0.044	0.138	0.045
Variance: Country	0.089		0.101		0.076		0.097		0.096	
ICC	0.082		0.091		0.071		0.088		0.087	
Pseudo R Square (AIC)			113686		115667		115681		111543	
Observations	64799		64799		65798		65798		63828	
Countries	61		61		62		62		60	

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.4.2: Financial Worry (monthly expenses and bills) – Estimates for the subsamples based on income, education, and gender

M1: Income based subsample (Bottom 60%: Quintile 1, 2, and 3 only); **M2:** Education based subsample (Primary or less only); **M3:** Gender based subsample (Female only)

	M1			M2			M3		
	β	**SE**		**β**	**SE**		**β**	**SE**	
Male	-0.131	0.013	***	-0.136	0.022	***			
Age: 33-48	0.140	0.017	***	0.132	0.029	***	0.121	0.017	***
Age: 49-65	0.142	0.019	***	0.084	0.031	**	0.128	0.019	***
Age: 66-above	-0.229	0.023	***	-0.192	0.038	***	-0.253	0.024	***
Education: Secondary School	-0.166	0.018	***				-0.191	0.020	***
Education: Tertiary and above	-0.361	0.023	***				-0.399	0.024	***
Income: Quintile 2	-0.177	0.016	***	-0.168	0.032	***	-0.167	0.022	***
Income: Quintile 3	-0.320	0.016	***	-0.326	0.033	***	-0.298	0.022	***
Income: Quintile 4				-0.454	0.034	***	-0.439	0.022	***
Income: Quintile 5				-0.652	0.037	***	-0.677	0.023	***
Formal Saving	-0.346	0.016	***	-0.323	0.033	***	-0.333	0.016	***
Formal Borrowing	0.050	0.016	**	0.077	0.031	*	0.074	0.016	***
Power Distance	0.179	0.061	**	0.226	0.062	***	0.148	0.059	*
Masculinity	0.077	0.044	.	0.050	0.045		0.088	0.042	*
Individualism	-0.276	0.060	***	-0.271	0.059	***	-0.287	0.058	***
Uncertainty Avoidance	0.017	0.045		0.042	0.044		0.032	0.044	
Long-term Orientation	-0.176	0.044	***	-0.173	0.043	***	-0.168	0.043	***
Intercept 0|1	-0.779	0.048		-0.707	0.052		-0.806	0.048	
Intercept 1|2	0.195	0.048		0.119	0.052		0.183	0.048	
Variance: Country	0.108			0.086			0.102		
ICC	0.098			0.079			0.093		
Pseudo R Square (AIC)	62566			22613			60239		
Observations	34289			11944			33656		
Countries	62			62			62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** p < 0.1; * p < 0.05; ** p < 0.01; ***p < 0.001; **ICC:** Intraclass correlation

Table 3.5.1: Financial Worry (for old age) – Estimates with the inclusion of additional country level covariates

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1			M2			M3			M4			M5		
	β	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**		**β**	**SE**	
Male	-0.149	0.009	***	-0.149	0.009	***	-0.147	0.009	***	-0.147	0.009	***	-0.151	0.009	***
Age: 33-48	0.221	0.012	***	0.221	0.012	***	0.229	0.012	***	0.229	0.012	***	0.219	0.012	***
Age: 49-65	0.227	0.013	***	0.226	0.013	***	0.236	0.013	***	0.235	0.013	***	0.226	0.013	***
Age: 66-above	-0.207	0.016	***	-0.207	0.016	***	-0.197	0.016	***	-0.198	0.016	***	-0.213	0.017	***
Education: Secondary School	-0.143	0.014	***	-0.144	0.014	***	-0.141	0.014	***	-0.141	0.014	***	-0.142	0.014	***
Education: Tertiary and above	-0.239	0.017	***	-0.240	0.017	***	-0.234	0.016	***	-0.234	0.016	***	-0.237	0.017	***
Income: Quintile 2	-0.105	0.016	***	-0.105	0.016	***	-0.105	0.016	***	-0.105	0.016	***	-0.111	0.016	***
Income: Quintile 3	-0.217	0.016	***	-0.217	0.016	***	-0.215	0.016	***	-0.215	0.016	***	-0.223	0.016	***
Income: Quintile 4	-0.313	0.016	***	-0.313	0.016	***	-0.312	0.015	***	-0.312	0.015	***	-0.319	0.016	***
Income: Quintile 5	-0.519	0.016	***	-0.519	0.016	***	-0.521	0.016	***	-0.521	0.016	***	-0.524	0.016	***
Formal Saving	-0.213	0.011	***	-0.214	0.011	***	-0.216	0.011	***	-0.217	0.011	***	-0.219	0.011	***
Formal Borrowing	0.092	0.011	***	0.092	0.011	***	0.091	0.011	***	0.090	0.011	***	0.097	0.011	***
Power Distance	0.068	0.054		0.104	0.056	.	0.079	0.050		0.093	0.055	.	0.102	0.055	.
Masculinity	0.094	0.038	*	0.101	0.041	*	0.102	0.036	**	0.097	0.039	*	0.093	0.040	*
Individualism	-0.181	0.055	**	-0.234	0.056	***	-0.156	0.052	**	-0.214	0.055	***	-0.199	0.058	***
Uncertainty Avoidance	0.022	0.040		0.041	0.045		0.086	0.038	*	0.057	0.042		0.047	0.044	
Long-term Orientation	-0.065	0.041		-0.101	0.041	*	-0.057	0.038		-0.100	0.040	*	-0.073	0.044	.
GDP per capita (PPP)	-0.143	0.050	**												
GDP growth rate				-0.005	0.043										
Universal Health Care							-0.172	0.043	***						
Urbanization										-0.061	0.044				
GINI Coefficient													0.084	0.044	.

(continued on next page)

Table 3.5.1: (continued)

Empirical models with additional country level covariate: **M1 –** GDP per capita (PPP), **M2** – GDP growth rate, **M3** – Universal health care index, **M4** – degree of urbanization, **M5** – GINI coefficient

	M1		M2		M3		M4		M5	
	β	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**	**β**	**SE**
Intercept 0|1	-0.905	0.041	-0.901	0.044	-0.888	0.039	-0.893	0.042	-0.902	0.043
Intercept 1|2	0.179	0.041	0.183	0.043	0.196	0.039	0.191	0.042	0.177	0.043
Variance: Country	0.081		0.092		0.073		0.088		0.088	
ICC	0.075		0.085		0.068		0.081		0.081	
Pseudo R Square (AIC)	125543		125550		127454		127466		123494	
Observations	64619		64619		65618		65618		63647	
Countries	61		61		62		62		60	

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; ***$p < 0.001$; **ICC:** Intraclass correlation

Table 3.5.2: Financial Worry (for old age) – Estimates for the subsamples based on income, education, and gender

M1: Income based subsample (Bottom 60%: Quintile 1, 2, and 3 only); **M2:** Education based subsample (Primary or less only); **M3:** Gender based subsample (Female only)

	M1			M2				M3		
	β	SE		β	SE		#	β	SE	
Male	-0.134	0.013	***	-0.099	0.022	***				
Age: 33-48	0.299	0.016	***	0.292	0.029	***		0.244	0.017	***
Age: 49-65	0.333	0.018	***	0.286	0.031	***		0.254	0.018	***
Age: 66-above	-0.109	0.022	***	-0.035	0.038			-0.218	0.023	***
Education: Secondary School	-0.110	0.018	***					-0.146	0.019	***
Education: Tertiary and above	-0.229	0.022	***					-0.234	0.023	***
Income: Quintile 2	-0.109	0.016	***	-0.104	0.032	***		-0.091	0.021	***
Income: Quintile 3	-0.217	0.016	***	-0.259	0.033	***		-0.192	0.021	***
Income: Quintile 4				-0.350	0.034	***		-0.288	0.021	***
Income: Quintile 5				-0.529	0.037	***		-0.492	0.022	***
Formal Saving	-0.235	0.015	***	-0.222	0.032	***		-0.210	0.015	***
Formal Borrowing	0.098	0.015	***	0.116	0.031	***		0.096	0.015	***
Power Distance	0.131	0.058	*	0.102	0.061	.		0.114	0.057	*
Masculinity	0.088	0.041	*	0.106	0.045	*		0.080	0.041	*
Individualism	-0.234	0.057	***	-0.295	0.059	***		-0.218	0.056	***
Uncertainty Avoidance	0.021	0.043		0.021	0.044			0.058	0.042	
Long-term Orientation	-0.110	0.042	**	-0.117	0.043	**		-0.088	0.041	*
Intercept 0|1	-0.790	0.046		-0.624	0.052			-0.870	0.047	
Intercept 1|2	0.253	0.046		0.191	0.051			0.226	0.046	
Variance: Country	0.098			0.087				0.094		
ICC	0.089			0.080				0.086		
Pseudo R Square (AIC)	66542			22760				65621		
Observations	34239			11952				33606		
Countries	62			62				62		

Gender: "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **SE:** Standard Errors; **Significance level**: **.** p < 0.1; * p < 0.05; ** p < 0.01; ***p < 0.001; **ICC:** Intraclass correlation

Table 3.6.1: Bayesian Statistics based multilevel models for Financial Resilience and Financial Worry

	FR				FWM				FWB				FWO			
		95% CI				95% CI				95% CI				95% CI		
	β	LB	UB		β	LB	UB		β	LB	UB		β	LB	UB	
Male	0.176	0.158	0.196	***	-0.227	-0.253	-0.199	***	-0.172	-0.194	-0.147	***	-0.183	-0.206	-0.159	***
Age: 33-48	0.097	0.069	0.120	***	0.164	0.130	0.196	***	0.122	0.091	0.150	***	0.284	0.256	0.314	***
Age: 49-65	0.072	0.047	0.097	***	0.182	0.147	0.217	***	0.129	0.093	0.157	***	0.291	0.257	0.323	***
Age: 66-above	0.179	0.140	0.211	***	-0.162	-0.206	-0.117	***	-0.284	-0.327	-0.236	***	-0.245	-0.290	-0.209	***
Education: Secondary School	0.332	0.302	0.357	***	-0.136	-0.170	-0.096	***	-0.224	-0.265	-0.191	***	-0.176	-0.211	-0.142	***
Education: Tertiary and above	0.595	0.554	0.629	***	-0.325	-0.373	-0.276	***	-0.470	-0.520	-0.426	***	-0.290	-0.330	-0.247	***
Income: Quintile 2	0.239	0.206	0.275	***	-0.145	-0.184	-0.101	***	-0.210	-0.246	-0.169	***	-0.130	-0.170	-0.091	***
Income: Quintile 3	0.398	0.366	0.436	***	-0.302	-0.345	-0.259	***	-0.385	-0.427	-0.343	***	-0.268	-0.307	-0.229	***
Income: Quintile 4	0.576	0.545	0.609	***	-0.468	-0.512	-0.420	***	-0.566	-0.613	-0.519	***	-0.388	-0.425	-0.346	***
Income: Quintile 5	0.854	0.817	0.889	***	-0.767	-0.818	-0.713	***	-0.854	-0.915	-0.801	***	-0.646	-0.692	-0.602	***
Formal Saving	0.543	0.518	0.566	***	-0.315	-0.346	-0.280	***	-0.417	-0.449	-0.380	***	-0.268	-0.292	-0.240	***
Formal Borrowing	0.146	0.123	0.173	***	0.053	0.023	0.081	***	0.069	0.042	0.098	***	0.113	0.088	0.142	***
Power Distance	-0.067	-0.209	0.061		0.232	0.059	0.414	**	0.179	0.019	0.324	*	0.127	-0.016	0.263	.
Masculinity	-0.091	-0.185	0.014	.	0.163	0.031	0.299	*	0.122	0.018	0.228	*	0.124	0.028	0.240	*
Individualism	0.233	0.093	0.368	**	-0.427	-0.600	-0.245	***	-0.360	-0.523	-0.213	***	-0.290	-0.435	-0.161	***
Uncertainty Avoidance	-0.027	-0.128	0.076		0.054	-0.069	0.188		0.003	-0.103	0.115		0.053	-0.056	0.151	
Long-term Orientation	0.150	0.047	0.248	**	-0.182	-0.315	-0.061	**	-0.207	-0.322	-0.090	**	-0.127	-0.224	-0.013	*
(Intercept)	0.879	0.766	0.978	***	1.328	1.172	1.460	***	1.015	0.896	1.153	***	1.105	0.999	1.227	***
Variance: Country	0.147				0.247				0.175				0.161			
Variance: Units	0.103				0.824				0.517				0.535			
ICC	0.118				0.119				0.104				0.10			
Pseudo R Square (AIC)	127429				117092				113104				124452			
Observations	64429				65686								65618			
Countries	62				62				62				62			

FR: Financial resilience; **FWM:** Financially worried for medical expenses; **FWB:** Financially worried for monthly bills and expenses; **FWO:** Financially worried for old age; **Gender:** "Female" is used as a reference category; **Age:** "15-32" is used as reference category; **Education:** "Primary or less" was used as a reference category for the education level; **Income:** "Quintile 1" was used as a reference category; **Formal Savings:** "No" was used as a reference category, **Formal Borrowings:** "No" was used as a reference category; **95% CI:** 95 % Confidence interval; **LB:** Lower bound of 95% CI; **UB:** Upper bound of 95% CI; **Significance level**: **.** p < 0.1; * p < 0.05; ** p < 0.01; ***p < 0.001, **ICC:** Intraclass correlation