ANALYSIS OF FACTORS AFFECTING FINANCIAL INCLUSION: ECOSYSTEM VIEW

Oksana Kabakova[1]**,**
Finance, Payments and e-Commerce Chair,
Moscow School of Management SKOLKOVO, Russia.
E-mail: Oksana_Kabakova@skolkovo.ru
Phone: +7 (985) 892-63-35
Postal address: Novaya ul. 100, Skolkovo village, Odintsovsky District, Moscow Region 143025

Evgeny Plaksenkov,
Finance, Payments and e-Commerce Chair,
Moscow School of Management SKOLKOVO, Russia.
E-mail: Evgeny_Plaksenkov@skolkovo.ru

Abstract

This study aims to research factors enabling financial inclusion in developing economies. The authors analyse the ecosystems of 43 countries using fsQCA in order to establish the configurations of ecosystem components that enable financial inclusion and those that lead to financial exclusion. Results show that there are three configurations of factors affecting financial inclusion: high socio-demographic and political factors in the absence of economical development; high social, technological and economical factors in the absence of political development; and political and economical factors in the absence of social and technological development. Two combinations of factors affecting financial exclusion are the absence of social and economical factors in the presence of political and technological development; finally, the configuration with absent socio-demographic, technological and political factors of development. The results obtained have policy implications for countries seeking to develop financial inclusion, outlining the most important spheres of the ecosystem to promote and support.

Key Words: *Financial Inclusion, fsQCA, Digitalization, Policy-making, Emerging Markets*

[1] Corresponding author

INTRODUCTION

A recent phenomenon observed in a number of countries is *financial exclusion (FE), meaning that not everyone has access to financial services or does not have enough knowledge or experience to use them*. The opposite phenomenon is *financial inclusion (FI), where there is uniform availability and usage of financial services* (World Bank, 2013). FI receives more and more attention from academics as well as policy-makers and financial market players due to its potential positive impact on the financial health and the development of the economy (Demirguc-Kunt, Beck, & Honohan, 2008; The All-Party Parliamentary Group on Microfinance, 2011).

Empirical research shows that a developed and inclusive financial system has the potential to reduce information and transaction costs, influence saving rates, investment decisions, technological innovation and the long-run growth rates (Beck, Demirguc-Kunt & Peria, 2007). However, while there may be more and more access to and usage of financial services in various countries, they differ significantly in the pace and scope of development or its quality (Chaia et al., 2009). Such countries as Colombia, India or Kenya (Banca de las Oportunidades, 2014; Kaur & Singh, 2015; Government of Kenya, 2013) have developed specific policies towards financial inclusion, which mostly cover promotion as well as regulation of financial system or customers' rights in financial markets. However, these policies notwithstanding, the growth of FI in emerging countries is not enough to allow them to reach the levels of developed markets of the likes of the UK, the USA or Sweden. The hypothesis is that the development of FI depends not just on the health of financial markets, but also on the entire ecosystem including economic, political, social and technological spheres. In this paper the authors link the ecosystem and environment theories with the FI phenomenon.

The study analyses a sample of 43 developing and low-income countries using the instruments of fuzzy-set qualitative comparative analysis. Access to accounts in each country proxies the outcome variable of financial inclusion (non-outcome is the reverse value reflecting financial exclusion), while condition parameters consist of the data for the 4 spheres of the ecosystem's environment, each constructed from 3 parameters.

The current research is the first to explore factors that affect the development of financial inclusion. Also, the paper contributes to the literature by connecting the ecosystem theories with FI phenomenon and discussing the ecosystem of financial inclusion. The results of the study could be applied by policy-makers in most countries seeking to develop financial inclusion policies. Moreover, existing policies could be adjusted to the factors believed to be crucial for the promotion of financial inclusion in each particular configuration. Additionally, each distinctive combination of factors can be used to explain the success of specific financial inclusion projects in this or other country.

Following the introduction, this paper offers an overview of the academic literature on the financial inclusion phenomenon and the ecosystem theory with a link to financial inclusion issues. The next section covers the research design and specifies the sample, method of analysis and relevance of fsQCA in this particular case and defines the list of outcomes and conditions. Finally, the paper discusses the results of the analysis and offers implications for academics and policy-makers as well as future research directions.

LITERATURE OVERVIEW

The phenomenon of financial inclusion emerged at the end of the 20th century with the idea that development should extend to all the spheres and not only, as it was previously believed, to the level of the GDP. The issue of 'financial inclusion' became a political issue first in the UK in 1997. By 2010 it was being discussed worldwide, and the Global Partnership for Financial Inclusion (GPFI) was founded (Financial Inclusion Commission, 2017; GPFI, 2017). As financial inclusion became a new economic and social phenomenon, academics and practitioners both turned their attention to this issue, prompting a new field of research on the topic.

While there may be no straightforward approach to defining financial inclusion, there are several unequivocal characteristics of the phenomenon from the literature which are: (1) *uniform availability of financial services; (2) regular usage; (3) good quality of financial services* and *(4) potential for increased welfare.* Moreover, the lack of financial inclusion is not limited to the so-called vulnerable social groups or emerging and low-income countries, where the problem of access to financial services is most acute. This issue may be relevant to any part of the population regardless of the social status or income and to any country irrespective of its development status. The strategy should concentrate on the financial sector as a vital element of economic prosperity. For example, Loayza & Ranciere (2006) find that the long-run growth effect of finance on economic growth is positive and dominates. Empirical research also shows that financial development decreases income inequality, although the effect may depend on the type of policy: e.g., capital stringency and supervisory regulation decrease inequality while market discipline and activity restrictions worsen it (Delis et al., 2013).

Previous research on financial inclusion falls into several types. One includes general studies of FI as a contemporary economical phenomenon across different regions and countries. While initial papers simply discussed the nature of FI and its definition (Dev, 2006), later research, like Chakravarty & Pal (2013) and Demirguc-Kunt et al. (2015), looked into ways to measure FI. There were also papers on ways to track and to analyse progress in the FI field in different countries (Bayero, 2015; World Bank, 2013). *E.g.*, Fungáčová & Weill (2015) analyse FI in China using the World Bank Findex Data: the authors find distinctive features of Chinese FI compared to other countries, discuss social characteristics influencing the FI level and offer main implications of several underdeveloped FI indicators for the development of the economy.

Although financial inclusion policies and actions may not have a long history, empirical research reveals a list of positive microeconomic and macroeconomic effects supporting the hypothesis that the growth of inclusive financial systems is a significant component of development progress. Microeconomically, access to finance influences both individuals and firms. The lack of access to financial services may lead to poverty traps and inequality, as is demonstrated in a number of studies (Galor & Zeira, 1993; Aghion & Bolton, 1997; Beck, Demirguc-Kunt & Levine, 2007). Moreover, a growing volume of literature focuses on the positive consequences of access to financial services, measured, for example, by the index of the density of ATMs and bank branches (Sahay et al., 2015) or by access to savings: those include higher savings, more productive investment, boosted consumption (Dupas & Robinson, 2013) and female empowerment (Sanyal, 2014). For the firms, empirical research shows that small businesses gain advantage from access to credit (Duflo et al., 2013). Moreover, insurance programmes targeting small agricultural enterprises and based on weather show a positive impact on farmers in India and Ghana due to the appropriate change in risk levels for farmers (Vickery,

et al. 2013; Karlan et al., 2014). Some research also shows the positive impact of financial inclusion on macroeconomic indicators: economic stability, measured by aggregate consumption volatility (Mehrotra & Yetman, 2015), growth (Dabla-Norris et al., 2015) and consumption and output (Buera, Kaboski, & Shin, 2012).

Recently, several authors have considered applying theoretical models to FI issues in order to evaluate effects of FI development (Dabla-Norris et al., 2015; Karpowicz, 2014). In these papers authors utilize a macroeconomic model with heterogeneous agents, absence of borrowing, external credit, limited commitment and asymmetric information in order to find the effect that FI has on the GDP and inequality in Uganda, Kenya, Mozambique, Malaysia, the Philippines, Egypt and Colombia. Apart from analysis through theoretical models, there exist some purely empirical papers looking into the effects of FI through surveys and longitudinal studies (Dobbie & Gillespie, 2010). For example, Jones (2009) finds statistically significant improvements in the mental health of the people who get financial advice and have access to various financial services, implying that financial inclusion has positive effects for health.

There is a distinctive niche in the literature occupied by case studies of various countries' policies and companies' project experience of FI. One of the best-known examples in both economic and business environment was M-Pesa in Kenya which was very successful in giving access to financial services to more than 9 million Kenyans through mobile banking (Mbiti & Weil, 2011; Jack & Suri, 2011). There are also several cases of businesses supporting FI such as M-Shwari in Africa (Cook & McKay, 2015) or Yandex.Money and QIWI offering access to e-wallets in Russia (Kabakova, Plaksenkov & Korovkin, 2016).

Policy papers on FI (Srinivasan, 2007; Mitton, 2008; Beck, Demirguc-Kunt & Honohan, 2008) are of special interest in the current research. These papers focus on policies addressing specifically the banking sector, expanding financial capacity literacy, skills and behavioural models through targeted programmes or more complex state-funded programmes for FI. However, what is lacking is deeper analysis of the direction that the policy should take in order to reach or maintain financial inclusion in the most effective way measured in time, money and other resources terms.

The ecosystem approach becomes relevant as it has the potential to find and analyse possible factors affecting financial inclusion or exclusion. Based on the current literature, the ecosystem of financial inclusion breaks comprises two parts: the environment and stakeholders (Moore, 1993). As current research mainly concentrates on macro features, it discusses how the environment may affect access to financial services.

Francis J. Aguilar (1967) introduced STEP, one of the first approaches to describing the environment and ecosystem where S stands for Socio-demographic sphere, T for Technological, E for Economical and P for Political. Then, the 'macro-analysis of the environment', or its alternative representation through environmental scanning, turns it into a STEPE analysis, where the last component is Ecology, which, in turn, is compound and includes a strategy behaviour and culture processes architecture (Davenport & Prusak, 1997). In the 1980s, a number of other authors, including Fahey, Narayanan, Renfro, Boucher and Porter offered their versions of environment classification: PEST, PESTLE, or STEEPLE. Thus, Morrison & Mecca (1986) proposed EdQUEST (Quick Environmental Scanning Technique), in which special attention was given to Education. Some more recent classifications also included legislation. While certain experts consider the latter to be superfluous and linked to the political sphere, in some contexts legislation

and law making may be relevant and sufficiently significant to be included in the analysis of the environment. Most recent modifications of the classification also include Ethical, Educational, Physical, Religious, and Security, Competition, Demographics, Ecological, Geographical, Historical, Organizational and Temporal (schedule) factors.

Despite the development of numerous complex models describing the environment, the authors consider the very first model of STEP to be the most appropriate for their research, thanks to the simplicity of its four basic dimensions of the ecosystem. Moreover, the hypotheses below show that the social, technological, economical and political spheres are indeed the major factors that could have an effect on financial inclusion:

– Socio-demographic factors

Social health of the ecosystem may play a key role in promoting financial inclusion since social welfare determines the way people behave and make decisions on financial markets (Cull, Ehrbeck & Holle, 2014). As previous research suggests, the less developed socio-demographic characteristics are, the more likely it is that the population will avoid using financial services preferring old-fashioned cash or even barter, and the number of people with a bank account will be small. Social welfare too may influence the depth of usage of financial services. Both factors affect the demand side of financial inclusion and hamper its development (Dev, 2006). However, where the range, complexity and quality of financial services are aligned with social development, this sphere might not be a problem for policy-makers.

– Technological (Digital) factors

More innovative companies enter the market with offers to make everyday financial transactions both less expensive and more convenient to their customers, giving rise to a new phenomenon of digital financial platforms. Thus, the ecosystem of financial inclusion is changing with a new big group of stakeholders from the digital world entering it (GPFI, 2014). Indeed, initiatives to increase financial inclusion in developing countries recently have started to rely increasingly on the use of technology – mobile banking, electronic payments or fintech start-ups (De Koker & Jentzsch, 2013). Moreover, as suggested by Adner and Kapoor (2010), the readiness of complements plays an essential role in solving the uncertainties in the ecosystem perspective, which is highly relevant to financial inclusion issues: i.e., mobile banking will not develop until there is a broad and high-quality mobile network in place.

– Economical factors

Recently, several studies have found that poverty as well as inequality negatively influences access to formal financial services (Jeanneney & Kpodar, 2011; Clarke, Xu, & Zou, 2006). Actually, Bittencourt (2012) and Pal (2011) find that financial development and economic growth are positively associated.

– Political factors

The political sphere has always been important for financial markets, playing an essential role in both boosting it or, sometimes, in the absence of proper regulation, holding up its development (Beck, Demirguc-Kunt & Honohan, 2008). As FI is part of financial markets, politics might also play a crucial role in its promotion. At the same time, in a number of countries initiatives in FI, including mobile banking solutions, were impeded by regulatory fears as to whether the proposed new regulatory models complied with international financial integrity standards (Chatain

et al., 2011).

RESEARCH DESIGN

By means of qualitative comparative analysis, this study explores the various configurations explaining a high level of financial inclusion across countries worldwide or its opposite, high financial exclusion.

To study the necessary and sufficient conditions for the development of a certain level of financial inclusion, the authors refer to fuzzy-set Qualitative Comparative Analysis (fsQCA) for a number of reasons. First, fsQCA facilitates the analysis of financial inclusion while accounting for causal inference (Ragin, 2008). Secondly, QCA could be used to analyse the data without any restrictions as to the sample size; this is in contrast to such common econometric methods as Ordinary Least Squares modelling, where no less than 10 observations are needed for each independent variable in the model plus 15 observations for the whole model. As a result, for a model with 6 explanatory variables the researcher will need some 75 observations (Green, S.B., 1991, Harrell, F., 2015). However, in the case of small populations or highly distinctive cases the sample size may be restricted to 30 or even fewer (starting with 10) observations. In this paper, the sample consists of emerging countries, and data collection results in a relatively small number of cases making QCA analysis more suitable. It is also important to differentiate between patterns explaining outcome and non-outcome, *viz.*, financial inclusion and financial exclusion. FsQCA accounts for causal asymmetry, which makes this method appropriate (Woodside, 2016).

The study analyses the financial inclusion level as an outcome. The latter is proxied by the access to financial services measured by the percentage of population with a formal banking account indicator (World Bank, 2013). To differentiate between the antecedents of ecosystems with a relatively high access to financial services and those with low access, the authors also examine separately the non-outcome of financial exclusion, calculated as a reverse from the financial inclusion variable.

The sample includes 43 emerging and low-income countries based on classifications of the World Bank and Standard & Poor's. The sample is based on the literature and availability of data on chosen ecosystem parameters. As Figure 1 shows, the sample represents three groups of countries: those with a relatively high financial inclusion (Mongolia, China, India, Russia), medium (Argentina, Nigeria) and low financial inclusion (Cambodia, Tajikistan).

+++Figure 1 +++

The study considers four different dimensions of the ecosystem: socio-demographic, technological, economical and political. All four dimensions are proxied as multiple-item measures, which were, at first, constructed, based on the literature overview (Collins, 2010) and theoretical assumptions, and then tested through exploratory (EFA) and confirmatory factor analysis (CFA) (Bagozzi & Yi, 1988; Malhotra et al., 2006).

The socio-demographic sphere is a construct measure of the socio-demographic index, financial literacy and urbanization. Initially, all three measures are chosen because of their suitability to proxy social development and being relevant for financial inclusion: GDP per capita, Employment and Business freedom proxy the economic sphere of the ecosystem. Mobile and Internet penetration together with e-Government coverage reflect the technological sphere (digital

development). The Political sphere includes government support, regulatory capacity and electronic payments regulation.

At first, the authors run EFA with 12 factors to arrive at 4 anticipated factors, each constructed from 3 measures (see Table 1). The authors use the CFA in order to access the reliability and validity of these multiple-item reflective construct measures. The result shows acceptable levels of composite reliability and average variance extracted for the construct measures as they exceeded the commonly used thresholds of 0.6 and 0.5, respectively. Besides, the results give Cronbach's alpha values higher than recommended cut-off value of 0.7 for all constructed measures. Additionally, all factor loadings are high and significant, implying satisfactory convergent validity. Turning to the overall model quality, the indicators reveal adequate representation of empirical data (comparative fit index is 0.94, Tucker Lewis index equals 0.97, root mean squared error of approximation is 0.073). In total, these indicators suggest that the model fits the data well.

+++Table 1 +++

Table 2 presents descriptive statistics for the outcomes and conditions together with the calibration criteria that are standardized relative to the sample values of each parameter with 10 percentile cut-off for full-nonmembership, 50 as cross-over point and 90 percentile as a full-membership cut-off (Ragin, 2008).

+++Table 2 +++

RESULTS

As the first step of the analysis, the authors checked if there were any trivial (i.e. of one condition at a time) intersections that passed the coverage rate cut-off of 53%, with no such cases established. Thus, the necessity analysis shows lack of necessary conditions explaining either high or low financial inclusion share in the economy.

Thus, the further step is to apply fsQCA to distinguish configurations (or combinations of conditions) sufficient to cause the outcomes. Figure 2 shows the visualized results for both outcomes: configurations 1 to 3 for financial inclusion and configurations 4 and 5 for financial exclusion.

+++Figure 2 +++

There are 21 countries characterized by financial exclusion in the sample, where the access to accounts is more than 42% of the adult population. The model gives three configurations explaining high financial inclusion through high access to accounts covering 72% of the phenomenon according to the solution coverage indicator. Configuration 1 is the following: high social and political development without peripheral economical development. Countries representing this configuration are Bolivia, the Dominican Republic, Ecuador and Indonesia as shown in Table 3. In configuration 2, financial inclusion requires high social and economical development as a core condition, with peripherally present technological and absent political

development. Countries representing this configuration are Argentina, Costa Rica, Panama, the Russian Federation, South Africa and Venezuela. Last but not least, high economical, political, absent peripheral technological and social development may cause high access to financial services as well (see configuration 3 in Figure 2). The country representing this configuration is Rwanda.

There are also two configurations explaining financial exclusion through low access to accounts, covering 52% of cases. There are 22 countries characterized by financial exclusion in the sample, where the access to accounts is less than 42% of the adult population. First, (see configuration 4 in Figure 2) relatively high technological and political development with low social and economical development may lead to low account accessibility. The country representing this configuration is the Philippines. In the Philippines there is a pretty high coverage of mobile usage; moderate internet coverage compared to other countries in the sample and higher than average e-Government development; an established regulatory framework for a financial market reflecting the well-developed political sphere; while economic (proxied by the GDP, employment and business freedom) and social spheres (for example, the indicator of financial literacy is very low) of the ecosystem environment are underdeveloped or not developed at all. Secondly, the most expected configuration is the low social, political and technological development causing financial exclusion (see configuration 5 in Figure 2). This configuration reflects the fact that if a country does not follow the strategy of the so-called 'inclusive growth' (developing all the spheres of economy), it will suffer from financial exclusion, together with other potential development problems which are beyond current research. Countries representing this configuration are Bangladesh, Cameroon, Guatemala, Madagascar, Nepal, Nigeria, Senegal and Tajikistan.

+++Table 3 +++

DISCUSSION AND IMPLICATIONS

FsQCA results in three different configurations explaining a high level of financial inclusion. These sets of ecosystem parameters are crucial to understanding how financial inclusion, where it has already reached some moderate levels, could be further promoted by governments and central banks with special policies and strategies. Two out of the three configurations include the presence of social development as a core condition for FI, the implication being that it is important to increase the level of socio-demographic welfare and financial literacy and support urbanization. In the first configuration, high development of the social sphere of the ecosystem is combined with high political development, which implies that if the ecosystem is politically and socially advanced, it may not require enhanced economical measures. In order to maintain and develop FI in this ecosystem, it will be enough to maintain political and social health. In the second configuration, social development together with technological and economical development causes high FI, giving one more formula for a financially inclusive ecosystem. As the technological component is present in this set, the implication is that digital progress accompanied by the appropriate economical environment (reflecting, for example, the availability of investment necessary for young fintech projects to exist and develop) and a strong socio-demographic component of the ecosystem lead to higher financial inclusion. As recent research suggests, digital innovations have a high potential for financial inclusion especially for regions where traditional banking may not have enough resources to reach the population that is not covered or insufficiently

covered by financial services (Klapper & Singer, 2014). The last configuration is the most trivial in terms of complexity of ecosystem development – under this set of causal factors, economical and political development is sufficient to provide FI while it allows for low development of social and technological spheres.

The analysis of the non-outcome (or financial exclusion) gives two more configurations that are critical in explaining why some countries could not reach financial inclusion. Unsurprisingly, if three out of four spheres of ecosystem are underdeveloped (in configuration 5), financial exclusion follows. This suggests a crucial role for the technological and digital component of the ecosystem. In contrast, as shown by the other (4^{th}) configuration of factors causing low financial inclusion, the underdevelopment of socio-demographic and economical spheres is undermining sufficiently any potential positive influence of digital and political development on financial inclusion; clearly, without social well-being and economic opportunities enabling and expanding the influence of financial innovations and technologies, proper regulation and governmental support or development of the technological sector would not be not enough to solve the financial exclusion problem.

These configurations provide indications as to which conditions deserve the attention of the local policy-makers. As follows from the analysis of the second configuration, it is important, first, to include digitalization in the financial inclusion policies and strategies, giving it one of the key roles. Secondly, the obtained configurations suggest that, on the one hand, it is not enough to develop only one sector to reach financial inclusion (as suggested by the necessity analysis) and, on the other, it is also not always the best solution to try to develop all sectors of the ecosystem by investing huge resources. According to our analysis, choosing the suitable combination of two or three sectors to support and advance may be enough to succeed. Additionally, the configurations for FI and FE emphasize that different strategies are needed (1) to solve the problem of financial exclusion where levels of access to financial services are extremely low; and (2) to boost financial inclusion where there is already some moderate access to financial services, as different factors explain financial inclusion and financial exclusion.

CONCLUSIONS, LIMITATIONS AND FUTURE DIRECTIONS

This paper is one of the first to link the financial inclusion phenomenon and ecosystem development by analysing which configurations of environmental characteristics may explain high access to financial services, and vice versa. It contributes to the academic literature, first, by offering an overview of the available knowledge about financial inclusion; secondly, by introducing the connection with ecosystem theory and, thirdly, by pioneering with fsQCA analysis applied to financial inclusion and ecosystem data.

Research also has important practical implications for policy-makers. As the results of the fuzzy-set qualitative comparative analysis imply, a sufficient number of countries eager to develop financial inclusion fail to utilize the opportunities in their ecosystems. Designing digital-specific policies may be a good way towards solving the financial exclusion problem in emerging countries. Moreover, developing financial inclusion strategies, it is important to consider at least two out of four spheres of the ecosystem - social and economical, economical and political or social, digital and political - leading to financial inclusion, according to our analysis. This will help allocate resources in such a way as to achieve the result in the most effective way both in terms of time and money. Also, the analysis reveals three different patterns explaining FI, dividing the observations with relatively high levels of financial services penetration into three groups. As a result, a country can benefit from sharing and acquiring experience in promoting FI with peers assigned to the same configuration. For example, as configuration 2 includes Argentina, Costa Rica, Jamaica, Mongolia, Panama, the Russian Federation, South Africa and Venezuela, these countries could do well to consider the best practices of each other. The Russian Federation could take into account the positive experience of South Africa in increasing financial inclusion through (1) moving disbursement of social grants to cashless; (2) agreeing on a partnership between the government and four major banks aiming at increasing access and usage of financial services; and (3) introducing special cards for the low-income population, etc. (Arun & Kamath, 2015).

To sum up, the current study supports the idea of employing an ecosystem approach to achieve and maintain a financially inclusive society, and offers practical implications for policy-makers on the ways to design strategies to achieve uniform access to financial services. The main finding is that government policy should indeed address the most severe market failures, such as legislation and regulation, economic behaviour and social welfare, supporting the previous knowledge on policy issues of FI (World Bank, 2013).

As financial inclusion is still a developing phenomenon, there is little theoretical literature devoted to it and a lack of statistical data, which is a major limitation. FI consists of four components – Access, Usage, Quality and Welfare (see World Bank, 2013), however, there is a unified approach only to the measurement of Access using the account data (our research uses this data). Other components of FI are complex, and there is an ambiguity in their measurement. Thus, the future direction is to develop a comprehensive indicator of FI fully reflecting all components and to include it in the analysis.

Additionally, as Karpowicz (2014) shows, FI influences GDP growth, GINI coefficient and interest rate spread, suggesting that there might be a reverse causality of FI development on the ecosystem – economical, social and political spheres. Nevertheless, as the Qualitative Comparative Method states sufficient conditions causing an outcome and provides estimates of

how well alternative conjunctive models may explain the behaviour of the outcome variable, there are no reasons to take this limitation into consideration as if it were under traditional statistical modelling.

Moreover, it may also be worth studying a sample of both developed and developing countries in order to take into account the configurations of ‘best practices’ of financial inclusion from developed world. So, the next step is to enhance the sample, collect additional data and test the hypothesis of the connection between FI and ecosystem development with new data.

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APPENDICES

Table 1. Information on Construct Measures

Construct measures	Description	Source	Factor loadings
1. Socio-Demographic (α=0.9, CR=0.91, AVE=0.73)			
Socio-Demographic Index	Weighted average of Income, Education Attainment, Total Fertility Rate	Global Burden of Disease Study	0.87
Financial Literacy	Assessment of knowledge of basic concepts: Interest Rates, Interest Compounding, Inflation, Risk Diversification	The S& P's Global Financial Literacy Survey	0.73
Urban Population	Urban population (% of total population)	World Development Indicators, World Bank.	0.79
2. Technological (α=0.85, CR=0.87, AVE=0.61)			
Internet Usage	Individuals using the Internet (% of total population)	World Telecommunication/ICT Indicators Database	0.85
Mobile Usage	Mobile-cellular telephone subscriptions per 100 inhabitants	World Telecommunication/ICT Indicators Database	0.74
E-Government Development	E-Government Development Index	UN E-Government Knowledge Database	0.93
3. Economical (α=0.85, CR=0.85, AVE=0.66)			
GDP per capita	Gross Domestic Product per capita in constant 2010 dollars	World Development Indicators, World Bank.	0.91
Employment	Proportion of a country's Employed Population (14 and older)	World Development Indicators, World Bank.	0.86
Business Freedom	Overall indicator of the efficiency of government regulation of business	Index of Economic Freedom	0.82
4. Political (α=0.89, CR=0.87, AVE=0.69)			
Government Support	Indicator of governmental strategy in financial inclusion and collection of financial data	Global Microscope on financial inclusion	0.99
Regulatory Capacity	Indicator of adequate and specialized capacity in place in the country's regulatory agency	Global Microscope on financial inclusion	0.71
Electronic Payments Regulation	Indicator of available infrastructure for financial inclusion and Digital Services	Global Microscope on financial inclusion	0.72

Table 2. Descriptive statistics and set calibration criteria

	Descriptive Statistics		Calibration Criteria		
	Mean	St.Dev.	Non-Member 10 percentile	Cross-over 50 percentile	Full-Member 90 percentile
Outcome					
Financial Inclusion	*0.44*	*0.21*	0.12	0.42	0.74
Financial Exclusion	*0.56*	*0.21*	0.29	0.49	0.62
Conditions					
Socio-Demographic	0.48	0.12	0.37	0.64	0.74
Socio-Demographic Index	0.60	0.13	0.18	0.28	0.40
Financial Literacy	0.29	0.09	0.21	0.54	0.85
Urban Population	0.56	0.22	1.72	3.98	5.60
Technological	3.86	1.46	1.65	4.23	5.74
Internet Usage	3.79	1.62	2.09	4.20	6.34
Mobile Usage	4.35	1.58	1.30	3.70	5.50
E-Government Development	3.53	1.67	2.54	3.62	4.86
Economical	3.68	0.82	1.11	2.40	5.70
GDP per capita	2.89	1.83	2.01	3.93	6.23
Employment	4.22	1.35	1.86	3.88	5.67
Business Freedom	3.99	1.46	0.32	0.49	0.64
Political	0.51	0.14	0.00	0.56	0.82
Government Support	0.50	0.29	0.18	0.42	0.81
Regulatory Capacity	0.50	0.20	0.25	0.50	0.75
Electronic Payments Regulation	0.56	0.24	0.37	0.64	0.74

Table 3. Country groupings based on fsQCA

	Country group	Configuration and description	
Financial inclusion	Bolivia	Configuration 1	• High social development • Technological sphere does not matter • Low economical development • High political development
	Dominican Republic		
	Ecuador		
	Indonesia		
	Argentina	Configuration 2	• High social development • High technological development • High economical development • Political sphere does not matter
	Costa Rica		
	Panama		
	Russian Federation		
	South Africa		
	Venezuela		
	Rwanda	Configuration 3	• Low social development • Low technological development • High economical development • High political development
Financial exclusion	Philippines	Configuration 4	• Low social development • High technological sphere development • Low economical development • High political development
	Bangladesh	Configuration 5	• Low social development • Low technological development • Economical development does not matter • Low political development
	Cameroon		
	Guatemala		
	Madagascar		
	Nepal		
	Nigeria		
	Senegal		
	Tajikistan		

Figure 1. Country data on financial inclusion

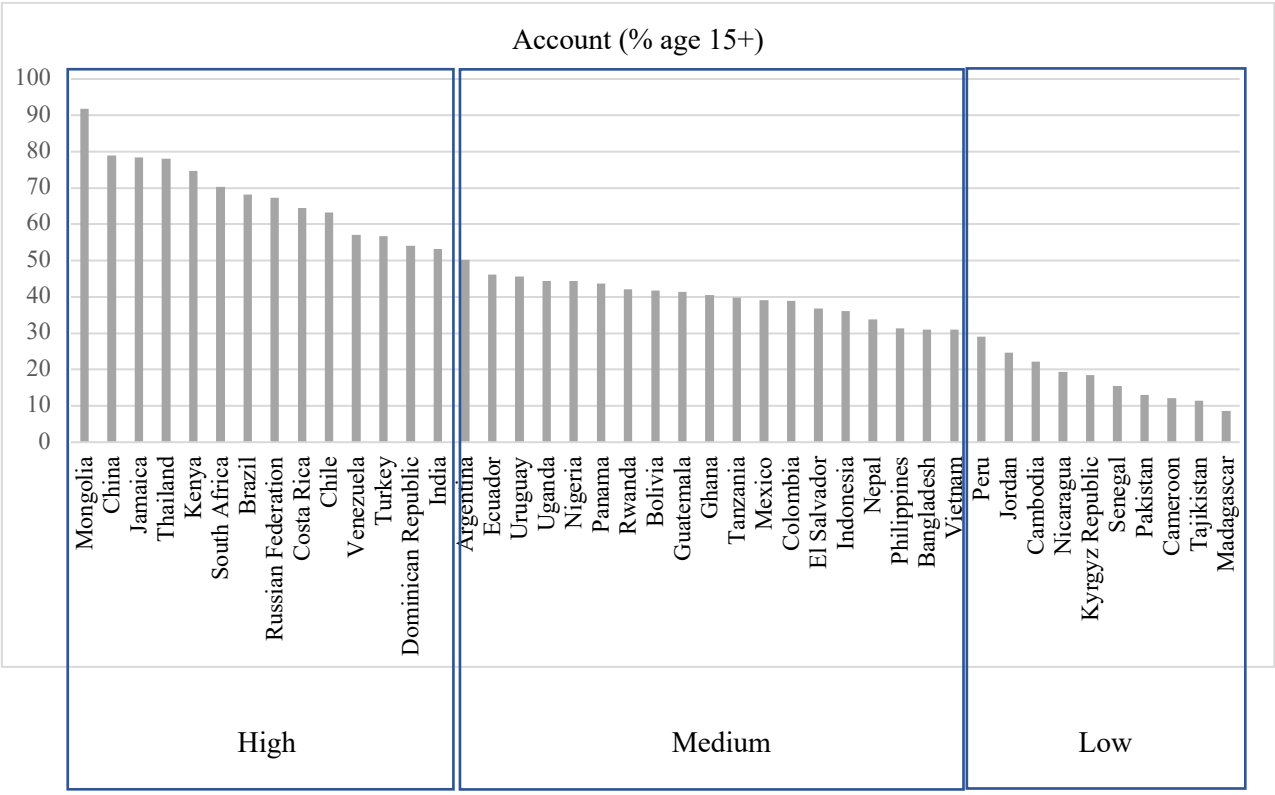

Figure 2. Results of sufficiency analysis of financial inclusion and financial exclusion levels