Financial Inclusion and the Blueprint Financial Ecosystem in Poverty Reduction: An Exploratory Analysis

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Abstract:The developing world has rapid increase in economic wealth over the last two decades, thereby reducing poverty in many countries. However, poverty development strategies in several countries have not resulted in the desired outcomes. A key factor hindering the poor from improving their socioeconomic status is the lack of affordable financial services that cater for their needs. Many of them do not have collateral, and as such, are unable to acquire the relevant resources to help them move up the innovation value chain. Countries across the globe have established microfinance institutions (MFIs) to provide the poor with access to capital that would enable them to acquire credit, financial and management training, and network connection to other economic agents. The levels of success, however, vary across the ASEAN region. In this paper, the performance of ASEAN countries in providing the poor with access to financing is examined. This study will show that the financial ecosystem to support business development in Malaysia is significantly higher than that of other developing countries within ASEAN. Key strategies to improve the financial ecosystem for marginalised communities are discussed in this paper. Lessons from the Malaysian case study will provide valuable insights to other developing countries in the formulation of an effective financial inclusive strategy to reduce poverty.

Keywords: Financial inclusion, microfinance, poverty and ASEAN

1. Introduction

Over the past five decades, liberalisation of the global economy accompanied by rapid technological innovation has opened up new opportunities for the developing world to be integrated with the global economy. Corresponding to this development has been the increase in global wealth, measured by the Gross World Product (GWP), from $8 trillion to $77.2 trillion, for the period 1950 to 2011 [1]. Much of this increase in global wealth has attributed to newly industrialized economies and rapidly developing countries in the Asia Pacific region. Although income levels in many developing countries have been on an upward trend, the wealth gap between the 'haves' and 'have-nots' in many of these countries have increased [2],[3]. The 1998 Nobel Laureate in Economics, Amatrya Sen, claims that basic amenities are scarce in many parts of the developing world. He states that "people live on less than $2 a day, do not have clean water, children do not go to school and many of them die every day because of hunger related diseases" [4]. As a result, the hard-core poor have very little employment opportunities and are often plagued with social problems such as drug addictions, crime, poor health, high mortality rates and displacement from their own natural habitat. [1]

The role of finance on economic development is well documented in the literature [5],[6],[7],[8]. Financial inclusion is stated as the access, availability and usage of formal finance by all members of an economy. It is widely acknowledged that the lack of financial inclusion of the poor is a major cause of

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poverty and unemployment among marginalized communities [9]. Microfinancing was introduced in the 1970s by Professor Muhammad Yunus to Grameen Bank of Bangladesh to provide small loans to the marginalised communities. The primary aim of the Grameen bank was to provide the poor with access to the much needed financing for economic activity, which otherwise would not have been available via traditional financial institutions. Over the years, MFIs have extended their services beyond credit to include savings facilities, insurance, financial management training, investment advice, network connection to suppliers and other economic agents. Many of them also assist in the mobilisation of new investments and monitoring of these projects. The success of the Grameen model has resulted in the scheme being replicated in other developed and developing countries across the globe.

Over the last three decades, ASEAN economies have experienced significant economic development due to the opening up of economies for foreign investments. However, of the 10 ASEAN economies, only Singapore has managed to increase its income level and reduce its poverty levels to that of developed countries. Most of the other ASEAN economies are still at the developing stage, with poverty still being one of the major development goals for many of these economies. Most of the countries have introduced microfinance schemes and other financial support schemes to assist the poor and marginalised communities to improve their income opportunities and social status.

In this paper, the following research question will be explored: Are the financial ecosystems in the ASEAN region and selected Asian countries effective in assisting the marginalised communities generate economic wealth and social capital? Thus, the primary objective of this study is to examine the state of poverty and access to financing in ASEAN and selected Asian countries. In this paper, a new framework for characterising the financial ecosystem will be presented. Using this framework, stages of development of the financial ecosystems in these countries will be benchmarked. This study shows that countries with a highly developed financial ecosystem are able to provide easy access to financing and are able to reduce poverty.

The study will show that Malaysia, an agricultural backwater, under-developed economy in the early 1960s was able to reduce poverty significantly through the development of an easy access to finance, skills development, entrepreneurship program and market linkages that assisted poor communities with integrating into a knowledge-intensive economy. Insights from the Malaysian financial ecosystem for the poor will be valuable for other developing countries in the formulation of effective development strategies to reduce poverty.

The paper is organised as follows. In Section 2, a brief review of the literature is provided. In Section 3, poverty levels and the state of development of the financial ecosystem for the poor are discussed. The examination of the Malaysian case study, along with the discussion of key policy issues for other developing countries within ASEAN are contained in Section 4. Finally, Section 5 provides concluding remarks, limitations of the study and directions to improve the study.

2. Literature Review

There is a general consensus that the definition of poverty varies according to a country's stage of development. In developing countries, poverty is defined as the lack of basic needs such as food, shelter, employment, healthcare and education. The common international absolute poverty line for the developing world is an income below USD1.25 per day, with moderate poverty classified as earning below USD2.00 per day [10]. The causes of poverty are multidimensional in nature, with some of these factors including the low level of skills and human capital development [11],[12]; low labour mobility [13]; lack of access to capital [14],[15]; and lack of basic facilities such as healthcare, sanitation, transportation, and new technology [16],[17],[18],[19],[20].

At a broader level, poverty can also be attributed to poor economic, social and political institutions [21]. Studies have shown that weak institutions lead to market failures such as corrupt practices, rent-seeking behaviour and moral hazards that continue to keep the poor in the clutches of poverty [6],[22]. Poor governance and a weak legal environment in developing countries hinder investments and business development in localities resided by marginalised communities. Prolonged living in depressed conditions can also lead to a culture of poverty among the poor [23],[24]. Due to the lack of cognitive ability, they lack the confidence to function effectively as a self-employed in an increasingly knowledge-driven society [25].

In addition to the above listed factors, one of the key factors that hinder the economic development of marginalised communities is the lack of credit that enables them to acquire the resources and know-how for business development. Most financial institutions do not provide credit to marginalised communities, who in most cases do not have collateral. The lack of financial services for these communities leads to market failures such as illegal money lenders and loan-sharks who exploit the poor and subject them to lifelong poverty and slavery [26].

3. Theoretical Framework and Empirical Methodology

In this section, the theoretical framework of a financial ecosystem and the empirical methodology for measuring the blueprints of the ecosystem will be presented. The relationship between the financial ecosystem and economic development of marginalised communities will also be discussed in this section. The data sources used in this study will also be provided in this section.

3.1 Financial ecosystem for marginalised communities: A conceptual framework

The discussions in the previous sections highlight the importance of credit for the economic development of marginalised communities. While credit is a necessary condition for economic development of the poor, it is not a sufficient condition for improving the welfare of these marginalised communities. A key driver for deepening the effect of finance for marginalised communities is the enabling environment to support business development and nurture entrepreneurship acumen.

In this paper, we define the financial ecosystem for marginalised communities using the '7*i*-innovation helix model' developed in Nair [27],[3]. The first blueprint of the financial ecosystem is the development of physical infrastructure, which includes the quality of transportation and electricity. Well-developed infrastructure will provide marginalised communities access to financial services. Sound transportation networks are important for facilitating effective communication between microenterprises, suppliers, retailers and markets. Sokoloff [28] showed that several US counties in the nineteenth century improved their innovative capacity by registering higher number of patents because of access to navigational waterways and transportation networks.

The second blueprint of the financial ecosystem is the information and communication technology (ICT) that enable microenterprises to achieve the following: access financial services with a click of a button; enhance their reach for resources, products and markets anytime and anywhere [29]; improve the richness of the products and services provided to customers through customisation [30],[31]; and receive real-time price and product information [32]. Thus, ICT enables microenterprises to pursue economies of scale and scope. ICT also enables the poor communities to acquire services which otherwise would not be available to them. These services include: access to educational and financial literacy programs; health services via tele-medicine services; voice in decision making; and, improving good governance and instilling greater transparency in decision-making [33]. Jensen [34] and Abraham [20] showed that the above-mentioned spill-over effects of ICT, in particular, mobile phones, have enhanced economic development of fishing and rural communities in India. A more recent study by Nair and Vaithilingam [35] also showed that ICT improves employment opportunities and increase income of 'urban-poor' communities in Malaysia.

The third blueprint of the financial ecosystem is the intellectual capital development. Lack of financial literacy and business skills are one of the key factor hindering economic development of marginalised communities. For example, De Mel, McKenzie and Woodruff [13] found that women micro-entrepreneurs in Sri Lanka were earning negative returns on capital due to lack of cognitive skills. Karlan and Validivia [36] showed that human capital development of poor communities improved business processes and productivity of clients, thereby increasing the return on investment of the capital. The study also found that higher education levels also increase client retention and repayment of the loans. Thus, enhancing soundness of the financial system catered for marginalised communities.

The fourth blueprint of the ecosystem is the institutions (legal, economic and social) that support the sustained development of the financial sector. Several studies have shown that effective regulations and quality institutions of governance are critical for protecting the interests of various stakeholders in the economy; ensure rules of engagements, processes and practices are clearly defined, transparent and are fair to all economic agents; and encourage global best practices that enhance financial sector development and economic value creation opportunities [37],[38],[39],[40],[41],[42].

The fifth blueprint of the financial ecosystem is integrity (governance) systems, which are critical for ensuring microfinance institutions and marginalised communities are able to get good value from the microfinance schemes. Weak governance systems can lead to market failures such as corrupt practices, violation of rule of law, exploitation of the poor and moral hazard problem, all of which can undermine the soundness of the financial sector and hinder economic development of poor communities. Corrupt practices can also lead to the following negative outcomes such as: increase the cost of business and financing; discourage the flow of investment, innovation and productive activities; hinder entrepreneurship among marginalised communities. An Asian Development Bank (ADB) study on poverty in Asia in 2002 contends that exclusion of the poor from participating in the formal financial and economic sector is not due to lack of investment, but often due to the following reasons: a result of inefficiency in the public sector; wasteful spending in unproductive activities; governance structures that lack transparency and accountability; corrupt practices; and domination of financial intermediaries (middle-persons) that charge the poor exorbitant interest and hold them indebted for long-periods of time and in some cases, the debts are passed on to the next generation [43].

The sixth blueprint of the financial ecosystem is interaction or smart-partnership between micro-entrepreneurs, microfinance institutions and other industries. The most successful microfinance models are those that move away from MFI-client relationship to that of a joint-partnership that mutually assist one another to meet their commitment in the context of MFIs. They extend their current role of financing to providing skills development program, matching the microenterprises with other industrial partners, technology partners, universities and organisations to assist them move up the innovation value chain. On the other hand, the role of the microenterprise is to ensure the resources provided are used effectively to become self-sustaining and to repay their loans on time. Microfinance institutions and microenterprise works towards nurturing the ‘quadruple helix’ (people, public, private and university strategic partnership) to enhance productivity, innovative capacity, income of the poor and financial sustainability of the microenterprises. Using Game-Theory, Wang, Van Tulder, Sterk and Willems [44] show that multi-stakeholder partnership model of microfinance “promote equality, equity and empowerment, which are long term vision based…., which enables the social network to involve all spheres and to form grass-roots connection that allows the excluded sections of society to have a voice,…manage expectations and allow them to overcome difficulties in working towards a common goal of poverty alleviation”.

The seventh blueprint of the financial ecosystem is incentives, which include availability of access to financing from microfinance institutions and other sources such as government and venture capital. Accesses to financing for the poor in many developing countries are limited, hindering economic development of marginalised communities. Financing provides the poor with an opportunity to acquire the relevant technology, training and networks to improve their productivity and innovative capacity. This will enable them to improve the quality of products and services, thus expanding their reach for new markets and subsequently raise their income levels. Cotler and Woodruff [45] noted that access to credit was one of the main challenges faced by microenterprises in Mexico and this impacted their business development. Similar results were obtained for SMEs by Schoombee [46] for South Africa, Saleh and Ndubisi [47] for Malaysia and Tambunan [48] for Indonesia and Thailand.

The above discussions highlight the seven blueprints as the key drivers for enhancing innovation of the financial sector and soundness of the financial ecosystem. These blueprints are summarised in Figure 1. Effective development of these blueprints will lead to improving the sophistication of the financial sector, enabling microenterprises to improve their productivity and enhance their wealth creation opportunities. As these microenterprises move up to higher competitiveness and wealth trajectories, the repayment of loans will improve, enabling the MFIs to re-invest the capital to strengthen the blueprints of the financial ecosystem. On the other hand, if any of the blueprints are weak, this will lead to a weak financial sector, hindering productivity and wealth creation opportunities of the microenterprises. This may exacerbate the poverty problem by increasing debts of the poor and jeopardising the repayment of the loans and the financial position of the microfinance institutions. The downward spiral will destabilise the financial sector in the long run. The linkage between the development of the financial sector for the poor, development of the microenterprises and improvement of the wealth of the poor are summarised in Figure 2.

Figure 1: The 'DNA' of Financial Ecosystem for Marginalised Communities

Adapted from: Nair (2007 and 2011)

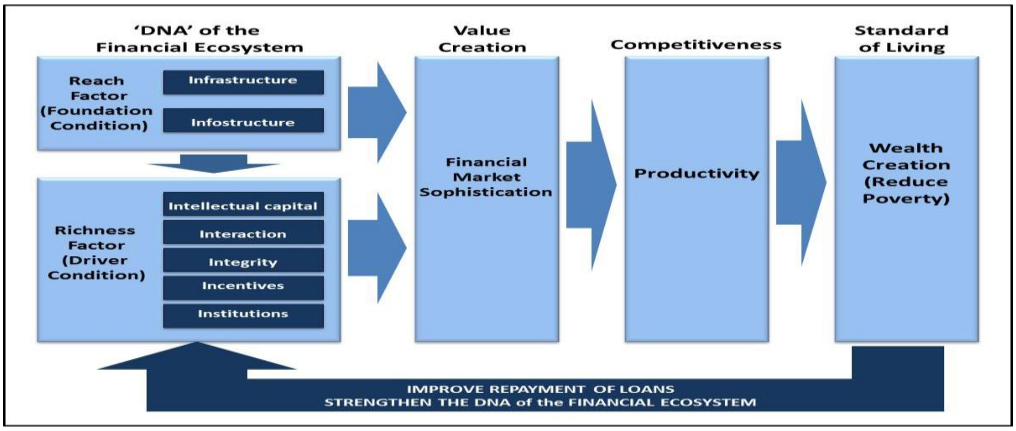

Figure 2: Relationship between financial ecosystem and poverty

Adapted from: Nair (2007 and 2011)

3.2 Measuring the blueprints of the financial ecosystem

In this study, secondary data from The *World Economic Forum Reports* by Schwab [49] is used. Our interest is in the seven ASEAN countries, followed by China, India and Bangladesh, for the period 2007 to 2011. The key factors for each of the financial ecosystem (FES) blueprint, financial innovation and poverty description are given in Table 2. Each of the seven factors that characterize the FES and innovation capacity is measured by multiple indicators and an average for each of the factors is computed. The poverty gap of below USD2 and the variables for info structure were obtained from World Bank [50].

Table 1: Description of variables and its corresponding proxies

Variables	Description	Proxy
Infrastructure (I_1)	Facilitate physical connectivity to the global economy	Quality of roads (I_{11}), Quality of railroad infrastructure (I_{12}), Quality of port infrastructure (I_{13}), Quality of air transport infrastructure(I_{14}) Quality of electricity (I_{15})
Infostructure (I_2)	Facilitate digital connectivity to the global economy	Mobile telephone penetration rate per 100 persons (I_{21}) Internet penetration rate per 100 persons (I_{22}).
Incentives (I_3)	Access to financing	Venture capital availability (I_{31}) Ease of access to loans (I_{32})
Institutions (I_4)	Legal and regulatory framework that facilitates the knowledge economy	Efficiency of Legal Framework, Property rights (I_{41}), Intellectual Property Protection (I_{42}), Burden of Government Regulation (I_{43}), Regulatory Standards (I_{44}), Strength of Auditing and Accounting Standards (I_{45})
Integrity (I_5)	Governance systems (corporate and public sector governance)	Diversion of public funds (I_{51}), Favoritism in decisions of government officials (I_{52}), Wastefulness of government spending (I_{53}), Transparency of government policy making (I_{54}) Ethical behaviour of firms (I_{55})
Intellectual Capital (I_6)	Literacy levels of the micropreneurs	Quality of the educational system (I_{61}) Extent of staff training (I_{62}).
Interaction (I_7)	Smart partnerships between economic agents in the economy	University/Industry Research Collaboration (I_{71}) State of Cluster development (I_{72})
Financial Innovation (FI)	Generation of new intellectual property and product development	Financial Market Sophistication (FI_1), Capacity for innovation (FI_2).
Poverty	Poverty gap below USD 2 corrected for Purchasing Power Parity.	

All the proxies for the blueprints of the financial ecosystem with the exception of the infostructure were measured on a scale from 1 to 7.[2] Next, the indices for the 7*i*'s and the Financial Innovation Index (FII) are constructed by calculating the average of the proxies relevant for each of the respective blueprints. All these indices were then converted to base 100. The Financial Ecosystem Development Index (FEDI) was then computed using a multiplicative measure characterised as follows: FEDI = $\sqrt[7]{\prod_{i=1}^{7} I_i}$. The assumption underlying the characterisation of FEDI is that all the 7*i* blueprints of the financial ecosystem are very important and any weaknesses in any of the blueprints will undermine the financial sector development. The data for the 7*i* blueprints were only available for selected ASEAN countries and they are Cambodia, Indonesia, Malaysia, Thailand, Singapore, Philippines, and Vietnam. As highlighted before, the other three Asian countries included in the benchmarking analysis are Bangladesh, China and India.

Due to data limitations for the poverty data, averages for the period 2007 to 2010 were taken for all countries. Scatter plots were constructed for FEDI-FII, FEDI-poverty and FII-poverty based on the average for the period 2007 and 2010 for the selected countries.

4. Policy Implications: Lessons from the Malaysian Experience

The trend analysis above showed Singapore and Malaysia as pace setter countries among the selected ASEAN countries, China, India and Bangladesh. The analysis revealed that both these countries have highly developed financial ecosystems and successfully reduced thepoverty rates. Though Singapore

[2] Infostructure data is hard data (i.e. nominal data) .

has performed better than Malaysia,the Malaysian experience is examined here as Malaysia is more closely aligned to the other selected countries in terms of stages of economic development. According to the trends above, the other regional countries fall in two stages of development for the 7*I's*, where China, Philippines, India, Indonesia and Thailand have begun to invest in these blueprints while the others, Cambodia, Vietnam and Bangladesh are more concerned with infrastructure and infostructure investment. Thus lessons and experiences from the use of MFIs in Malaysia will provide valuable insights to the other regional countries to emulate.

Malaysia was a back water nation in the 1960s and early 1970s, where incidence of poverty was around 49.3% [52]. By 2009, the incidence of poverty fell to 3.8%, a staggering 1200% reduction in poverty levels. Significant reduction in poverty in Malaysia is attributed not only to access to credit for the poor, but the creation of a 'holistic' financial ecosystem that assisted the poor to move up the innovation value chain and create enterprises that contributed to the wealth of the country.

There are several microfinance schemes introduced to provide financial assistance to marginalised communities in Malaysia. The largest funders is Amanah Ikthiar Malaysia (AIM) which was formed in 1981, was modelled after the Grameen Bank in Bangladesh. AIM has as of December 2009, given credit to 211,069 participants, with a cumulative funding from 1990 to 2009 of approximately RM3.7 billion and with a repayment rate of 99% [53].

A second microcredit scheme called the Yayasan Usaha Maju (YUM) was introduced in 1988 for poor communities in Sabah. As of December 2011, YUM gave credit to 28,041 participants with a cumulative credit of RM118.94 million, with a repayment rate of 84% [54].

The third scheme is called The Economic Fund for National Entrepreneurs Group (TEKUN Nasional), became operational in 1998 and is managed by the Ministry of Agriculture and Agro-Based Industry. The primary objective of TEKUN Nasional was to provide easy access to financing and nurture the culture of entrepreneurship among small Bumiputra businesses. As of August 2009, TEKUN Nasional has given credit of RM1.4billion for 187,805 participants, and as of May 2009, RM741million of the loan was repaid [55].

TEKUN Nasional works closely with Yayasan Strategic Social and Economic Planning Unit from the Prime Minister's Department and launched the Young Indian Entrepreneurship program to support business development under the Ninth Malaysian Plan (2006-2010) to eradicate poverty among the Indian community. Malaysian Indians from the age of 18 and 45 can apply for innovative business ventures. As of 31 October 2009, RM14.5 million was allocated under this scheme and approximately RM7.55 million was disbursed to 1074 young Indian entrepreneurs [56].

The Malaysian government recognised that the Small Medium Enterprises are the engine of economic growth and source for improving the economic wellbeing of marginalised communities. Around 80% of the SMEs in 2005 were micro enterprises [57]. To nurture the development of these micro enterprises, a comprehensive microfinance institutional framework, which consisted of banking institutions, development financial institutions and credit cooperatives were approved by the National Small Medium Development Council [57]. These institutions adopted different business models to cater for a variety of economic activities, which include [57]:

- *Mass market model* – where microfinance was provided via the network of branches of banks across the country, which include conventional and Islamic banks;
- *Distributor network model* – financial institutions fostering linkages with other institutions and organisations that can co-share infrastructure networks, customers and capabilities;
- *Community banking model* – services provided to specific marginalised communities; and,
- *Monoline model* – the development of microfinance branches that have specific market positioning, branding, business model and systems from the parent institutions.

To ensure take-up of microfinance among marginalised communities and microenterprises, Bank Negara developed marketing and promotion strategies via placing advertisements in strategic locations and working through chambers of commerce, trade associations and local councils [57]. These initiatives led to RM224.7 million funding disbursed to 22,788 customers, with an average financing of RM9,800 [57].

The above initiatives highlight that the Malaysian government was pro-active in introducing new institutions and restructuring existing institutions to provide marginalised communities access to adequate financing for economic development. Besides financing, the Malaysian government was also pro-active to ensuring the enabling environment was in place to ensure the poor get good returns from the credit. Among the key initiatives undertaken are the improvement of the physical infrastructure in rural areas and localities of the poor communities. These include the Federal Establishment of the Land Development Agency (FELDA) established in 1956 and the Federal Land Consolidation and Rehabilitation Authority (FELCRA) in 1966 to assist marginalised communities in the rural areas to participate more effectively in national economic development initiatives (http://www.felcra.com.my and http://www.felda.net.my).

The FELDA and FELCRA schemes have played key roles in improving the basic infrastructure; introduce modern technology and efficient land management practices so as to enable rural communities get better returns from their agricultural land. These schemes fostered inter-sectoral linkages and strategic partnerships between the rural agricultural communities, industrial and service sectors. The smart-partnership programs not only improved the socioeconomic wellbeing of the poor communities but the plantations producing primary commodities such as palm oil became major economic drivers for Malaysia. In 2009, palm oil contributed to 3.2% of real GDP of Malaysia [58].

The Malaysian government was also conscious that new technologies such as ICT can play an important role in enhancing socioeconomic development of poor communities. In 1996, the Malaysian government introduced the Multimedia Super Corridor to transform the nation into an information-driven and knowledge intensive society. Under the 8th, 9th and 10th Malaysia Plans, ICT connectivity was intensified in localities resided by poor communities. As part of these 5-year economic plans, marginalised communities were provided access to ICT services through community-based ICT center programs such as Gerakan Desa Wawasan, Medan InfoDesa and Pusat Internet Desa[59],[60,[52] . Increased ICT literacy and access to ICT via these programs have enabled marginalised communities access to services such as healthcare, financing and other online government services, which would otherwise be inaccessible. Nair and Vaithilingam [35] showed that ICT use among 'urban-poor' communities in Malaysia enhance employment opportunities, access to services such as education, financing, healthcare and information vital for business development.

In summary, the above discussion highlights that the success of the poverty reduction strategy in Malaysia is attributed to the development of an effective financial ecosystem that not only provided marginalised communities access to credit, but also an enabling environment (7*i*) that fostered business development, entrepreneurship, inter-sectoral linkages and strategic partnerships with key stakeholders in the economy.

5. Conclusion

In this paper, we examined the key blueprints of the financial ecosystem. The blueprints are infrastructure, infostructure, intellectual capital, institutions, incentives, integrity and interaction in the selected ASEAN countries, China, India and Bangladesh. The exploratory study showed that countries with highly developed financial ecosystem have much lower poverty rates compared to countries which have only invested in selected blueprints of the financial ecosystem. Key strategies to improve the financial ecosystem for marginalised communities are discussed in this paper by examining the Malaysian case study.

Although this study provides insights into the factors that characterise the financial ecosystem, there are two major limitations with this study. First, due to data limitations for the poverty measures for several developing countries, averages for the period 2007 to 2010 were taken for the selected countries. Due to these limitations, relationship between financial ecosystems, financial innovation and poverty were examined at a specific point in time. This approach may miss important dynamics between the blueprints of the financial ecosystem and poverty in the sample countries. Future studies should consider other more robust measures of poverty for developing countries that span a longer period. Second, this study is an exploratory study. More robust econometric analysis should be used such as dynamic panel data method and structural equation modelling (SEM) to study the underlying relationship between the blueprints. These two advanced econometric methods will overcome issues related to endogeneity.

Despite of the above mentioned limitations, the study does provide a better understanding of the blueprints of a financial ecosystem that is able to support developing countries in the formulation of an effective financial inclusive strategy to reduce poverty.

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