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## **Impact of financial innovation and financial inclusion on sustainable rural development**

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#### **Abstract:**

Rural banking has made some great achievements, but problems like the uneven distribution of credit across developed and less developed regions, the low amount of institutional credit held by low-income groups and their reliance on non-institutional sources, nevertheless loom larger than ever. Due to this, ensuring that institutional funding of rural areas enhances financial inclusion is currently the most crucial issue. Financial innovation is essential for long-term rural development. This investigation seeks to identify that role. The information was acquired from those in rural Bangalore who had benefited from financial inclusion programs. The study's nature is descriptive. The questionnaire was prepared after a thorough review of the pertinent literature and consultation with industry professionals, and it was then put through extensive testing to confirm its validity and reliability. Using the convenience sampling method, 121 participants were selected from Hoskote Taluk, Devanahalli Taluk, Dodballapur Taluk, and Nelamangala Taluk in the Bangalore rural district. Simple frequency and percentage analysis, descriptive statistics, and a scale's reliability and validity were all evaluated using the SPSS program. To analyze mediation, the Andrew Hayes process model 4 was used. The importance of financial inclusion for sustainable development is highlighted by the fact that, despite the lack of a direct link between the two concepts, the cumulative

impact of the relationship is considerable. It is crucial to achieve the highest level of sustainable development and to increase financial inclusion by designing financially creative solutions that meet the demands of the rural poor. This research adds significantly to the area, despite the fact that financial inclusion has long been recognized as an essential component of socioeconomic empowerment.

**Keywords: Financial Inclusion, Sustainable Development, Financial Innovative**

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## **Introduction**

Financial inclusion is the effort to guarantee that all members of a society may obtain the financial goods and services they need from major financial institutions at affordable rates and in a transparent and fair manner.

It's possible that if more people have access to financial services, investment and GDP might rise as a result. Financial hardship has always been a problem for people of lower incomes, and the widespread availability of banking services and products is intended to alleviate this problem. Before, unbanked people had to rely on informal credit sources like friends and family, but now they also have access to official credit.

Payment cards, mobile money, and other fintech (financial technology) applications are only a few examples of the digital financial services that can have far-reaching positive effects on economic growth. Credit and insurance are two examples of financial services that can help people improve their standard of living by allowing them to establish or grow a business, invest in their health or education, mitigate financial risks, and weather unexpected financial setbacks.

### **Figure 1- Gateway of financial inclusion**



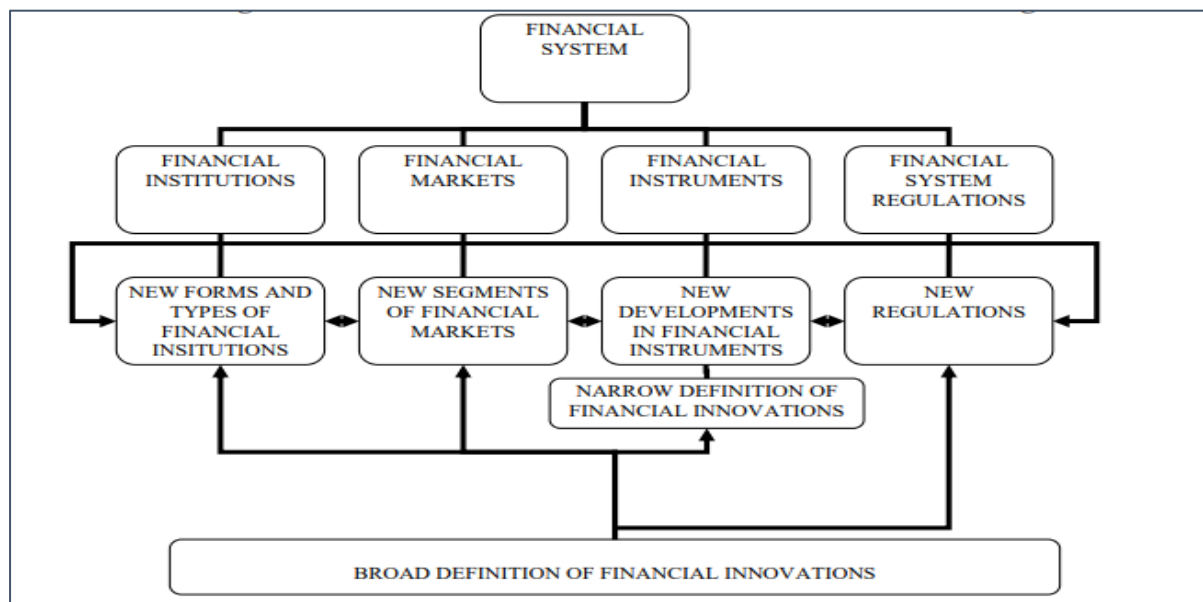
Source: <https://www.worldbank.org/en/news/immersive-story/2018/05/18/gains-in-financial-inclusion-gains-for-a-sustainable-world>

### Financial innovative

The creation of novel financial products, services, or procedures is known as financial innovation. Changes in monetary tools and settlement procedures co-shape their evolution. Money lending and borrowing is the cutting edge of financial innovation. Equity capital, remittances, mobile banking, and many other aspects of the financial system fall under this umbrella phrase.

Innovations in the financial industry and the technological sector have been side by side for as long as these two businesses have existed (Michalopoulos, Leaven and Levine, 2009). The development of both the economy and technology have always been intertwined. Due to the high investment risk involved with conventional funding sources, financial innovations provide a means of financing technically innovative projects. However, due to technological and economic development, which has increased the complexity of business processes and given rise to new kinds of risk, the financial system and financial markets are being forced to modernize so that they can meet the new demands of business entities and the challenges of the present day. So, without monetary enhancements, national wealth would be lesser and economic and scientific development would proceed at a slower pace. There wouldn't be as much demand for economic novelties if there weren't any technological advancements.

**Figure 2- Financial Innovation**



Source: Błach, Joanna (2011)

As a result, the word "financial innovation" can be used in two different ways.

Financial innovations can be classified in two ways: either narrowly, as a change in the type of financial instrument (such as a completely new instrument), or broadly, as any change in the financial system itself (such as a combination of existing instruments or a modification to an existing instrument) (markets, institutions, instruments and regulations).

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Rural banking has advanced significantly, but problems still persist, such as the uneven distribution of credit across established and developing regions, the poor institutional credit penetration of small and marginal farmers, and their reliance on non-institutional sources. Due to this, ensuring that institutional funding of rural areas enhances financial inclusion is currently the most crucial issue. Making sure that everyone has access to financial services, irrespective of their income level, is one of the most crucial components of the "inclusive development" plan. Although it's the first step toward achieving full financial inclusion, credit inclusion is just the start. It is impossible to understate the impact of non-governmental organizations (NGOs) on the financial markets. The position is necessary due to widespread market failures, which are typical in the current globalized world. In emerging nations, it's crucial to design government policies that take into consideration the constraints of both the market and the government. One example of this kind of activity is initiatives to assist the poor and underprivileged by enhancing access to financial services. One strategy for finding a remedy is to encourage experiments with small groups of persons in certain geographic locations and under strict supervision to comprehend how various ways can function. A lawful payment system must encourage those who are excluded to use the procedures in order

to be successful. By incorporating all of the aforementioned strategies, the financial inclusion process may result in the expression "let's link everyone."

## **Review of Literature**

**Lal, T. (2021)**, The results of the study indicate that financial inclusion significantly affects the economic growth of marginalized groups, particularly via the mediation of social and economic empowerment and economic empowerment. Although there have been numerous government measures to promote financial inclusion, financial institutions still do not offer credit to the most disadvantaged populations. Due to their lack of education, illiteracy, knowledge, attitudes of bankers, and legislative directives to the banking industry, these communities do not feel self-reliant and proud in the face of a financial crisis or other problems. **A Singh, S., and a Shah, M. S. (2020)** As vital as financial inclusion is, other variables such as capacity building, frequent financial aid and coaching, nurturing, peer support, and the like are equally crucial for economic empowerment. Founded on an investigation of eleven rural women who were able to access economic opportunities, acquire assets, better their families' living conditions, and inspire other women in similar situations to do the same, the argument is based on this research. When it comes to their total empowerment, women need financial inclusion (FI). Even though it is the current national priority development agenda, a well-thought-out yet adaptable strategy to recognise and meet the special needs of excluded groups, notably women, is required for it to be really effective. To be effective, FI necessitates a number of other components, all of which must be acknowledged and integrated into the broader development agenda.

**Tina Sach deva & et.all (2018)**, examined that 95 percent of the villagers were familiar with the banks through some sources. Nearly, 89 percent were having bank accounts either in public and Grameen banks, while 88 percent of respondent have Zero bank account. The banks were the primary means of information for the villagers. In order to reach large population, creating awareness through the NGOs or bank officials, linkage programmes tied up with SHGs or NGOs and using electronic print media in local language were some of the suggestion offered in the study. **Shahanas Beegam P. P & Noushad K. T (2017)**, analysed that most of the respondents were aware and were also availing various services provided by banks, but the knowledge level with respect to financial inclusion schemes was low. Thus scrutinizing RBI norms, being more approachable to customers, increasing ATM centres, creating awareness of new schemes by banks, furnishing complete information to customers about various services offered and enhancing quality of service delivery were some of the suggestions recommended. **Vinay K. Srivastava & Mukesh Kumar Sharma (2016)**, investigated and found that the knowledge level of financial products and services amid the people is average. The main reason for them to open a bank account was to receive benefits from MGNREG and subsidies from Government and other schemes. Low family income, lack of education and absence of formal financial institutions in rural areas were the reasons

for average awareness level. The study suggested that, if the above issues are considered as top priority large rural populace can be included under main stream of inclusion.

**T. Arun and R. Kamath (2015)** Due to its significance in fostering economic growth, financial inclusion is a high priority in the policy objectives of the majority of governments. A roundtable discussion on financial inclusion policies and practices will provide a global and regional perspective in light of this environment. The collection of macrodata included in the study serves as evidence that a more progressive strategy to financial inclusion is required. The round table members also provided their perspectives on financial inclusion practices and policies in Australia, South Africa, and India. Researchers used this study to look at how Indigenous culture affects participants' understanding of money and their worldviews on financial competence and well-being in order to better understand and meet the needs of the participants. **Y. Z. Xu, X. Hsu, and Tian X (2014)** Cross-country evidence on the influence of financial market expansion on the literature has never been published before. A recent study found that the expansion of the equity and credit markets has differing effects on a nation's rise in patent applications. The authors reach the conclusion that while an increase in stock market capitalisation stimulates innovation, it also serves to restrict it based on their research. To explore the relationship between financial development and creativity, researchers use cross-sectional variance in investor protections and economic development levels. Cross-sectional research suggest that nations with stronger shareholder protection and less creditor protection, as well as developing markets, are more likely to experience the effects of financial expansion on innovation. **Bhuvanesh, Pooja & Sharma, Jain & Jain, Kameshwar (2014)** India, which has the biggest rural population in the world and is heavily dependent on agriculture, makes financial inclusion a key part of its economic growth strategy. Financial inclusion, sometimes referred to as inclusive finance, is the provision of financial services to individuals and families from lower socioeconomic levels. By promoting the financial independence of the most vulnerable members of society, economic and social growth can be accelerated. Until financial inclusion has the desired impact on society's economic and social development, there is still a long way to go. According to statistical data, there is a long-term connection between the government's role and financial inclusion, which benefits India's economy. **T. M. WAEMA and T. K. OMWANSA (2014)** The Kenyan Central Bank has undertaken numerous initiatives to advance financial inclusion since its founding. Cell carriers and financial institutions have successfully introduced a number of new services, either to make it easier for their current consumers or to draw in new ones, demonstrating their ability to innovate. However, despite these advancements, Kenyan people continue to have limited access to legal financial services. Most of the world's poorest people lack access to financial resources that are suited to their requirements, making it impossible for them to leave poverty. This is particularly true for those who have low literacy levels and typically meager, irregular, and intermittent income. According to the study's conclusions, the poor need financial instruments that are current, adaptable, practical, rapid, and reasonably priced.

**Nyangweta, J. O., and Epper, V. S. (2014)** Improving the socioeconomic, cultural, and political circumstances of the rural populace is crucial as a first step toward achieving sustainable rural development so that they can actively participate in their own development, intentionally bring about their own development, and reap their own share of the benefits. Nonetheless, there have been two major obstacles that have remained throughout the last 50 years in the fight against poverty and for equal opportunity. On average, more than a billion people on the planet make less than \$1 per day to get by. The battle of the poor is getting harder as poverty spreads over the world and becomes more severe. There is a notable disparity between the wealthy, males and women, as well as urban, rural, and suburban groups, even in Sub-Saharan Africa. The provision of affordable and accessible banking and financial products and services to low-income and disadvantaged individuals is an aim of the financial inclusion plan. **Sanjay Kukreja and Ashutosh Sharma (2013)** For developing countries, a new era of inclusive growth has begun; the foundation of inclusive growth is financial inclusion. Making financial services affordable for those with low incomes and other disadvantages is what we mean when we talk about financial inclusion. In order to improve financial economic growth, there have been many difficult challenges in the field of financial inclusion, such as bridging the gap between social groups that are excluded from the formal financial system and those that are included, promoting financial literacy, and strengthening credit delivery mechanisms. By promoting the financial independence of the most vulnerable members of society, economic and social growth can be accelerated. What financial inclusion is and why a community's social and economic well-being depends on it

**A. N. Sarkar (2013)** The Federal Emergency Management Agency, the Reserve Bank of India, the Insurance Regulatory and Development Authority, the Pension Fund Regulatory and Development Authority, the Securities and Exchange Board of India, among other institutions, have all been developing policies and regulations that reflect the inclusive growth agenda over the past ten years. The banking sector has carried out several well-planned program efforts in a time-bound manner, with the Reserve Bank of India (RBI) and National Bank for Agricultural and Rural Development (NABARD) at the fore. **Donald L. (2012)** Inclusive innovation is currently on the rise in India, thanks to social entrepreneurs there. Because the banking system and the microfinance sector are unable or unwilling to give entrepreneurs credit, they are unable to grow their businesses. Nonetheless, recent years have seen a slight reduction in the financing gap as a result of novel and inventive strategies. India has made ground-breaking efforts to close the financial gap that inclusive and creative entrepreneurs face. These organizations are collaborating to provide a network of assistance for inclusive business owners and entrepreneurs. Incubation programs for all types of businesses and micro-venture capital are advantageous to them. While some projects "graduate" from business incubation to micro venture capital investment, others stay in the incubation stage. **Jansen and Hannig (2010)** Financial innovation can have serious systemic repercussions for an institution, as the current financial crisis has demonstrated. As a result of the financial crisis, efforts have been made globally to modernize and tighten financial rules.

It is important to prevent a backlash against financial inclusion at a time when stricter regulations are being put in place. Data on low-income borrowers demonstrates that they uphold sound financial habits, keeping their assets safe and repaying loans even during economic downturns. Small client balances and low transaction volumes may be indicators of the institutional risk profiles at the bottom of the financial market, which are characterized by a high number of vulnerable clients.

**W. Frame, S. Scott, and L. J. White (2004)** In this paper, Researchers present a summary of the previous empirical research on financial innovation. Researchers in this study performed a survey and examined previously available empirical literature on financial innovation. Research papers that empirically test financial innovation hypotheses have been a constant theme in this paper; however, some conjectures as to why this scarcity might not be so surprising have been offered as well as some suggestions for why it might not be so surprising after all have been offered. It is possible to find financial innovation anywhere. At least as productive as the sixteen years, prior, financial innovation has occurred in the sixteen years since then. In the business and financial press, a number of novel tools, techniques, and organisational structures are frequently discussed. "Innovation-minded" researchers will be able to supply the rest of the raw materials for empirical investigations, maybe supplemented by more regulatory surveys and more access to them. *The authors advise their colleagues in finance economics to put in some effort in this underdeveloped area of study. Hence the current study is an attempt to understand the mediating role of financial innovative in achieving Financial inclusion for sustainable rural development.*

### Research methods

The data was gathered from the recipients of financial inclusion programs in rural Bangalore for this descriptive study project. The questionnaire was created after a thorough assessment of the literature and consultation with subject matter experts in the area. Scale validity and reliability tests were performed on the questionnaire, and the results are as follows.

**Table 1 – Data collection tool- scale validity and reliability**

<b>PARTS</b>	<b>No of questions</b>	<b>Type of questions</b>	<b>Type of scale</b>
<b>Demographic variable</b>	5	Multiple Choice	Nominal scale
<b>Financial Inclusion</b>	6	Likert scale	Ordinal scale
<b>Financial Innovation</b>	4	Likert scale	Ordinal Scale
<b>Sustainable development</b>	5	Likert scale	Ordinal Scale



All statistics are within the acceptable range CA- Cronbach Alpha should be  $>0.700$ , AVE  $>0.50$  AND CR – Composite reliability  $>0.90$ . Therefore, the questionnaire is considered to adhere to all criteria of scale validity and reliability.

**Sample design :** Keeping in mind the Cochran formula of an unknown population with a 10% percent margin of error and ninety-five percent confidence, a sample size of one hundred people who participated in the survey would be perfect for the investigation. The number of beneficiaries associated with various financial inclusion schemes is unknown. However, Glen d. Isreal recommended that an extra 30 percent may be included to account for odd answers. As a result, 130 questionnaires were circulated, and after removing responses that were determined to be outliers, 126 legitimate responses were selected for the study. The sample was selected by the use of the convenience sampling method in each of the four Taluks of the Bangalore rural district -Hoskote Taluk, Devanahalli Taluk, Doddballapur Talukand Nelamangala Taluk

**Plan of Analysis** – Simple frequency and percentage analysis and descriptive statistics was carried out through SPSS Software, the scale validity and reliability was tested using the same software. For mediation analysis Andrew hayes process model 4 was used.

## **Discussion and results**

### **Demographic Profile of the participants in the study**

Only 28% of female respondents who have accounts participate in financial inclusion programmes, compared to 72% of male respondents. 28.1 percent of participants were in the 40–60 age range, while 45.5 percent were in the 20–40 age range. 12.2 percent of participants were under 20 years old and 60 years or older (14.2 percent). Basic education is considered to be completed after a student has reached the tenth grade, and while the majority of respondents have not finished school, 8.8% of them have completed their education through the fifth grade and 14.8% have reached the tenth grade, respectively. Only 4.3 percent of respondents have finished post-graduation, compared to completion rates of 15.9 percent for PUC, 14.8 percent for graduation, and 14.8 percent for PUC. Therefore, it may be assumed that the majority of participants are uneducated or just have a basic education, which may affect their ability to grasp the government's economic development programmes. One of the most crucial factors that affects the respondents' economic condition is their monthly income. In the current study, the respondents' income has been divided into four categories 51% of participants make between Rs. 5001 and Rs. 10,000 in monthly income, 21% make between Rs. 10,001 and Rs. 20,000, 16.5 percent make less than Rs. 5,000, and just 11.1 percent of participants make more than Rs. 30,000.

### **Financial inclusion status of the Participants**

49.1 percent of respondents have a yellow card, 47.2 percent of respondents have a green card, and 3.7 percent of respondents do not have a ration card. The majority of respondents—

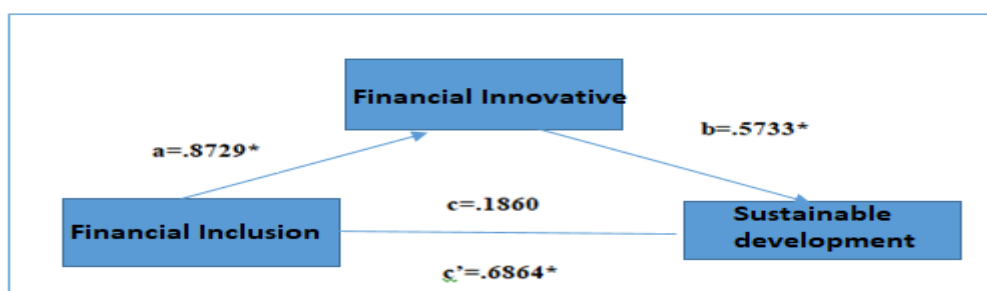
76.6%—agreed that there is no bank in their village, while the remaining respondents—23.3%—agreed that they can access a bank there. Thus, it can be concluded that a sizeable number of rural regions still lack access to financial services, which may explain why the respondents were unaware of the numerous banking services and amenities offered by the government under the Financial Inclusion Scheme. 76.1 percent of those surveyed had established accounts with public sector banks, 12.5 percent with private sector banks, and 4.3 percent and 7.1 percent with microfinance and cooperative banks, respectively. 94.3 percent of respondents said they had established a savings account, while the remainder respondents said they had opened current accounts, fixed deposit accounts, and loans, in that order. The goal of the financial inclusion programme is to make sure that low-income and vulnerable populations have access to a variety of financial services. When asked why they used financial inclusion programmes, respondents stated that there was no minimum balance requirement for opening bank accounts, which was a factor in their decision to do so. Following that, Participants may take advantage of the direct benefit transfer service, simple money transfers, interest on savings, and a life insurance payout in the event of your demise.

### **Hypothesis - Financial Innovative mediate the role between financial inclusion and sustainable development**

(a) Relationship between Financial Inclusion and Financial Innovative is significant at  $t(28) = 2.6514$ ,  $p = .0000$ ,  $p = 0.0130$ , the lower-level confidence interval .1985 and higher-level confidence interval is 1.5473 does not move through 0. Therefore, this relationship is significant. The co-efficient is .8729 indicating that Financial Inclusion leads to 87.29% positive change in use of Financial Innovative

(b) Relationship between Financial innovatives and sustainable development is significant at  $t(28) = 0.3.5568$ ,  $p = .000$ ,  $p = 0.014$ , the lower-level confidence interval .2426 and higher-level confidence interval is .9040 does not move through 0. Therefore, this relationship is significant. The co-efficient is .5733 indicating that financial innovative leads to 57.33% positive change in sustainable development

**Figure 3 - Financial Innovative mediate the role between financial inclusion and sustainable development**



(C ) Direct effect of X on Y Relationship between Financial Inclusion and Sustainable development is insignificant at  $t(28) = .1860$ ,  $p = .0000$ ,  $p = 0.5586$ , the lower level confidence interval  $-0.4584$  and higher-level confidence interval is  $.8305$  moves through 0. Therefore, this relationship is insignificant.

(C1)  $\Sigma$  Effects of X on Y Relationship between Financial Inclusion and sustainable development through financial innovative is significant at  $t(28) = .6864$ ,  $p = .0000$ ,  $p = 0.0494$ , the lower-level confidence interval  $.6949$  and higher-level confidence interval is  $.3619$  does not move through 0. Therefore, this relationship is significant.

The direct relationship between Financial inclusion and sustainable development is insignificant; the total effect relationship is significant showing Financial Inclusion and sustainable development through financial innovative is significant. Alternate Hypothesis accepted.

## **Conclusion**

The study contributes significantly to the narrative of financial inclusion as it pertains to socioeconomic empowerment and economic progress of underprivileged populations. When it comes to financial exclusion, the socio-economic elements of the excluded populations are examined. Because of this, policymakers, researchers, and academics at the national and international levels can benefit from the study's insights into how to design and implement programmes that increase access to financial products and services, reduce poverty, and promote income parity, social and economic empowerment, economic development, and a decrease in discrimination based on castes and genders.

The following are some of the recommendations made in order to increase members' understanding and use of financial innovation and financial inclusion benefits:

Financial Innovative are significant in improving the effect of financial inclusion, there needs to be work done on developing financial innovative which suit the requirements of the Rural Poor to attain Maximum sustainable development. By launching aggressive marketing efforts based on cutting-edge ideas, banks may better educate the public about financial inclusion and the benefits it provides. The banks must conduct periodic surveys and organise frequent meetings to address the issues and disseminate financial information that would greatly benefit the participants in order to better understand the practical difficulties that participants face when trying to take advantage of the Financial inclusion scheme's and financial innovative benefits.

In the survey, it is clear that most participants' income levels are low, and this is a major factor in them not using bank services. As a result, the government has the ability to generate a enough number of income-generating opportunities to raise their standard of living. If financial inclusion is seen as a business model, rather than as something that must be

achieved, it may turn out to be the root cause. However, despite RBI's efforts, the unbanked have been unable to get access to banking services as a result of its use of business correspondent arrangements. As a result, the government must expand the number of business correspondents and assign 100 families to each BC, who will be solely responsible for handling all of the households' banking needs.

Governments and insurance companies must work together to ensure that the notion of financial inclusion is taught in middle school and high school curricula, so that the next generation is well-versed in money matters from an early age. Providing account users with access to financial information in their native language, such as via mobile SMS, passbook, and ATM kiosks, is an important part of the programme. RBI grading procedures based on the financial performance of rural banks must be initiated for successful development of financial inclusion and financial innovative in rural regions. The RBI must set a minimum standard of efficiency for banks below which a penalty would be imposed if they fail to reach it (as in case when the banks fail to meet its cash reserve ratio). The reserve repo rate would be higher if banks were doing a better job of promoting financial inclusion and financial innovative. As a result, commercial banks would be under psychological pressure to take serious action toward financial inclusion.

### **Scope for further research**

The research's findings may be used to develop more specialized, user-centered financial innovations for various ethnic and cultural groups, including financial/consumer education. This study can also help other underbanked populations around the world including in India.

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