Westcliff International Journal of Applied Research
WIJAR

*Westcliff International Journal of Applied Research*
*Vol. 8, No. 1. Spring 2024*
https://doi.org/10.47670/wuwijar202481kkna

# Exploring the Synergy between Financial Inclusion and Entrepreneurship Development - A comprehensive Analysis of the Indian Landscape

*Dr. Neha Arora*
Geeta University, India

*Prof. Krishna Khanal*
King's College, Nepal

**Abstract**

The present study intends to explore the relationship between financial inclusion and entrepreneurship development in India. Entrepreneurship development is essential for the economic growth of an economy. Financial inclusion by providing easy credit availability at affordable cost aids in entrepreneurship development. To measure the level of financial inclusion three basic parameters i.e., availability of banking services, penetration of banking services and usage of banking services is used. The level of entrepreneurship is measured through the number of new businesses registered per 1000 individuals of the age group 15 to 64. By employing multiple regression model, the study found a positive relationship between financial inclusion and entrepreneurship development in India. This finding underscores the significance of financial inclusion in not only aiding business initiation and expansion but also in catalysing job creation, boosting economic growth, and alleviating poverty.

*Keywords*: Financial Inclusion, entrepreneurship, GDP, economic growth, banking services

## Introduction

Entrepreneurs often encounter significant challenges related to finances, as securing funding is a crucial hurdle in initiating and building their businesses (Onyekwelu *et al*., 2023). Scholars emphasize the pivotal role of finance in determining the level of commitment and effort an entrepreneur allocates to their entrepreneurial endeavours (Claessens & Parroti, 2007; Goel & Madan, 2019). In response to this challenge, numerous developing nations have adopted financial inclusion as a strategy to promote entrepreneurial growth. This approach is not only advantageous for the formal economy but also facilitates the integration of rural residents into the informal sector. Financial exclusion hampers economic growth. As people who are outside the umbrella of the formal financial system may take finance from the informal financial system at high cost or they may lose the opportunity to start or expand the business. Thus, financial inclusion directly serves the need of entrepreneurs by providing credit to entrepreneurs at an affordable cost. Access to banking services directly influences welfare (Nanda & Kaur, 2016). A country by increasing the level of financial inclusion may increase its economic growth, economic empowerment, and reduce the level of poverty (Fareed et al., 2016; Sethi & Acharya., 2018; Inoue, 2019). An inclusive financial system boosts economic growth.

Financial inclusion means access to finance at an affordable cost in a timely manner and in an unbiased way. Financial inclusion represents a significant economic goal for numerous nations, especially those in the

developing world, as research consistently indicates a direct correlation between financial inclusion and poverty alleviation (Zogning, 2023). Government of India is continuously trying to provide financial inclusion as its spurs the economic growth rate. India is a fast-growing economy. Despite of continuous increase in GDP, rate of unemployment in country is alarming. Recent initiative of Government of India has shifted the focus from job seekers to job giver thus creating the ample opportunities for entrepreneurship in the economy. Financial inclusion not only aids in starting a business but also helps in improving the level of a business which leads to creation of jobs in economy, increase in economic growth rate and reduction in the level of poverty.

Sample literature is available to measure the level of financial inclusion. Many studies also establish the relationship between financial inclusion and economic growth but studies that focus on the linkage between financial inclusion and entrepreneurship development is in scanty (Fareed et al. 2017; Sethi and Acharya, 2018; and Innoue, 2019). The present study will add into literature the relationship between financial inclusion and entrepreneurship development in India.

The rest of the paper is organised as follows, section 2 covers relevant literature review, section 3 discusses the research methodology employed, section 4 deals with detailed analysis and interpretation and section 5 discusses the conclusion and recommendations.

**Literature Review**

Entrepreneurship development in an economy leads to its development. The Government of India is trying to make India job provider, not a job seeker. In this direction, several policies have been launched by the government of India starting from Pradhan Mantri Mudra Yojana (Bharti & Verma, 2023), Start-up India (Kalaivani et al; 2023), make in India (Bishnoi, 2017). Developing nations consider financial inclusion as one of the main strategies to promote entrepreneurship development as financial inclusion provide access to basic financial services at an affordable cost and in an unbiased manner.

**Level of Financial Inclusion**

Financial inclusion is not a new phenomenon. Ample literature is available on measurement of level of financial inclusion. Leyton and Thrift (1995) found that every financial institution ascertains the cost of lending before lending, which usually remains higher for meagre and underprivileged section of society. The study revealed that it is the nature of structural setup of the institutions that disfavours the lower income segment of society. Kempson and Whyley (1998) investigated various factors influencing the state of financial inclusion. The study discovered that when the formal zone failed to supply adequate services, the informal sector became active and fills this gap by supplying suitable and constant offering. Sarma (2008) calculated an Inclusive financial inclusion index for 100 countries for the year 2004. The study used three basic dimensions related to commercial banks to measure financial inclusion. The three dimensions used by Sarma to develop a financial inclusion index are: availability of banking services, penetration of banking services, and usage of banking services. The inclusive financial index for the India was 0.166 which was not good as compared to other economies. Kumar (2013) investigated the determinants of financial inclusion from 1995 to 2008. The study revealed the positive relationship between deposit and credit penetration. The study found a positive relationship in credit and deposit penetration. The study also revealed the negative impact of population on deposit penetration in India.

**Financial inclusion and Entrepreneurship Development**

Wang and Tan (2017) studied the impact of financial inclusion on development of farmers entrepreneurship. The study resulted in a positive relationship between the two. Fan and Zhang (2017) studied the impact of financial inclusion measures on entrepreneurship development in China from 2005 to 2014. By using data from 31 provinces and 19 industries, the study concluded the existence of a strong relationship between financial inclusion and entrepreneurship development. Financial inclusion by providing easy credit facility led to entrepreneurship development. Fareed et al. (2017) also found a positive relationship between financial inclusion and entrepreneurship development specifically in case of women entrepreneurs. Goel and Madan (2019) studied the impact of financial inclusion measures on development of women entrepreneurship in Uttarakhand in India. By conducting a primary survey, the study concluded a positive and significant impact of

financial inclusion measure on development of women entrepreneurship in Uttarakhand. Jiang et al. (2019) constructed a multidimensional financial inclusion index for China employing the data from 22 provinces and 4 municipalities from 2004 to 2017. Despite the huge inter provinces disparity in the level of financial inclusion, study concluded a positive and strong impact of financial inclusion on farmers entrepreneurship in China.

**Methods and Materials**

The present research employs a quantitative research design, utilizing secondary data analysis. It intends to explore the relationship between financial inclusion and entrepreneurship development in India. The data is analysed using the multiple regression model. This approach is suitable for this research question as it allows for the exploration of the impact of multiple financial inclusion indicators (number of bank branches, credit accounts, and credit as a percentage of GDP) on entrepreneurship development (measured by new firm registrations) in India. Multiple regression is well-suited for studying the relationships between multiple independent variables and a dependent variable. The use of a multiple regression model in this study is justified as it allows for a comprehensive analysis of how various measures of financial inclusion collectively impact entrepreneurship development in India. This methodology is particularly effective for handling multiple variables simultaneously and controlling for confounding factors, making it suitable for the study's quantitative, data-driven approach.

**Choice of variables**

***Measurement of Financial Inclusion***

Financial inclusion is measured through the number of bank branches for 10,000 individual number of credit accounts held by per 1000 individual, amount of credit as a percentage of GDP.

***Measurement of entrepreneurship development***

Entrepreneurship is measured by the registration of new firms for 1000 individuals in the country of the age group 15 to 64.

***Sources of data***

The data on the registration of new firms per 1000 individual among the age group 15 to 64 is taken from the World Bank entrepreneurship survey database. The data on financial inclusion indicators have been collected from the RBI website.

***Model specifications***

$ED= \beta_0+\beta_1 CBB+ \beta_2 CA+ \beta_3 CREDIT+\mu_i$

Here, $\beta_0$ is intercept

ED is entrepreneurship development in India,

CBB is number of bank branches for 10,000 individuals,

CA is number of credit accounts held by per 1000 individual,

CREDIT is amount of credit as a percentage of GDP,

$\mu_i$ is the error term

$\beta_1$, $\beta_2$, $\beta_3$ are coefficients of CBB , CA and CREDIT respectively.

**Results and Discussions**

Using the model development equation 1, we tried to explore the relationship between financial inclusion and entrepreneurship development in India. The study employed annual data from 2006 to 2018 from the World Bank database. Our dependent variable is entrepreneurship development which is measured through the registration of new firms for 1000 individuals among the age group 15 to 64. The level of financial inclusion is measured through the number of commercial bank branches for 10,000 individuals, the number of credit accounts per 1000 individuals, the amount of credit disbursed as a percentage of GDP. Table 1 shows the results of the impact of financial inclusion on entrepreneurship development in India.

Table 1 shows the results of the overall model. The probability value of f statistics shows a positive association between financial inclusion and entrepreneurship development. Thus, indicating the level of financial inclusion in a country promote entrepreneurship development in a nation. The value of R square is 69.76 indicating a good model fit.

**Table 1**
*Model Summary*

| Variable | Coefficient | Std. error | T statistics | Prob |
|---|---|---|---|---|
| C | 0.171848 | 0.215968 | 0.795 | 0.4623 |
| CA | 0.001495 | 0.000644 | 2.321 | 0.0679 |
| CBB | 0.012470 | 0.005627 | 2.216 | 0.0775 |
| CREDIT | 0.131494 | 0.376709 | 0.349 | 0.0413 |
| R Squared | 0.795 | | | |
| Adjusted R square | 0.891 | | | |
| S.E of regression | 3.845 | | | |
| Sum squared resid | 0.000 | | | |
| Log-likelihood | 1.899 | | | |
| F Statistic | 13.749 | | | |
| Prob (F-Statistic) | | | | |
| Prob(Wald F-Stastic) | | | | |

*Note*: Authors' Calculation

Table 1 presents the model summary and shows the impact of financial inclusion on entrepreneurship in India, using data from 2006 to 2018. The model summary includes key statistical measures that indicate the strength and validity of the regression model used. The table indicates a positive association between financial inclusion and entrepreneurship development, with an R-squared value of 69.76, suggesting a strong explanatory power of the model.

**Test of Goodness of Fit**

In order to further strengthen our results, some tests are performed to check the robustness of model. The results of diagnostic check are shown in Table 2-4. All results show our model is free from any defect.

**Test of Heteroskedasticity**

**Table 2**
*Results of Breusch-Pagan-Godfrey Heteroskedasticity*

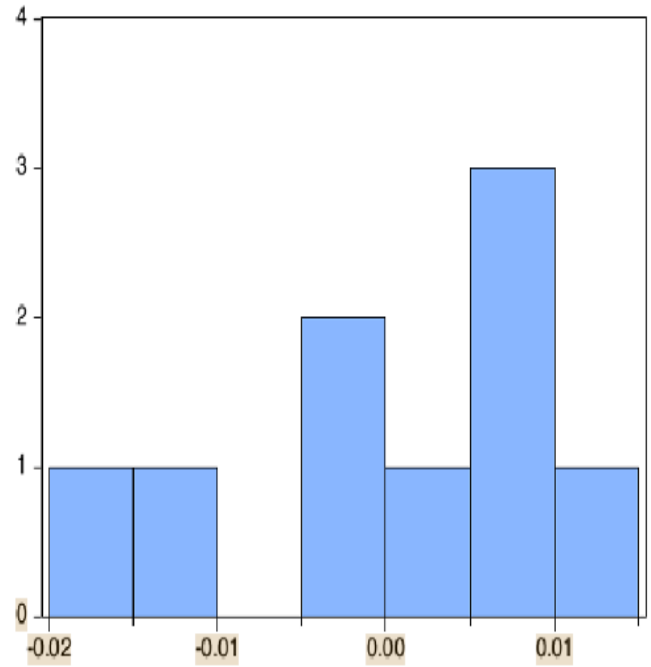
| | | | |
|---|---|---|---|
| F-statistic | 0.596088 | Prob. F (3,5) | 0.6445 |
| Obs* $R^2$ | 2.370913 | Prob. $\chi^2$ (3) | 0.4991 |

*Note:* Author's calculation

Table 2 presents results of various diagnostic checks, including the Breusch-Pagan-Godfrey test, to ensure the robustness of the regression model. This table is key in demonstrating that the model is free from common issues like heteroskedasticity (unequal variance of residuals), serial correlation (autocorrelation), and non-normality of residuals. The Breusch-Pagan-Godfrey test, specifically, is used to detect heteroskedasticity in regression models. Its inclusion in Table 2 helps to validate that the error terms in the model have a constant variance, which is essential for reliable regression analysis.

**Test of Normality**

**Figure 1**
*Normality Test*




| Series: Residuals | |
|---|---|
| Sample: 2010-2018 | |
| Observations: 9 | |
| Mean | 2.93e-17 |
| Median | 0.001333 |
| Maximum | 0.010683 |
| Minimum | -0.016009 |
| Std. Deviation | 0.009262 |
| Skewness | -0.592020 |
| Kurtosis | 2.096457 |
| Jarque-Bera | 0.831879 |

Figure 1 presents the results of the test of normality for the residuals of the study regression models. It covers a sample period from 2010 to 2018 with 9 observations. The figure includes various statistical measures such as mean (2.93e-17), median (0.001333), maximum (0.010683), minimum (-0.016009), standard deviation (0.009262), skewness (-0.592020), kurtosis (2.096457), and the Jarque-Bera statistic (0.831879). These measures are essential for assessing the normality of the residuals in the regression models used in the study.

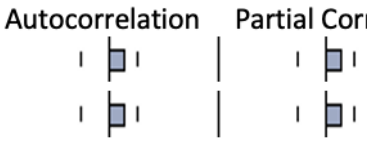
**Test of Serial Correlation**

**Table 3**
*Results of Breusch-Godfrey Serial Correlation LM Test*

| | | | |
|---|---|---|---|
| F-statistic | 0.446182 | Prob. F (2,3) | 0.6766 |
| Obs*$R^2$ | 2.063341 | Prob. $\chi^2$ (2) | 0.3564 |

**Test of Autocorrelation**

**Table 4**
*Correlogram of Residuals*




| | AC | PAC | Q-Stat | Prob |
|---|---|---|---|---|
| 1 | -0.065 | -0.065 | 0.0526 | 0.819 |
| 2 | -0.438 | -0.444 | 2.7625 | 0.251 |

Source: Author's Calculation

Tables 3 and 4 contain results of diagnostic checks for the model, including tests for heteroskedasticity, serial correlation, and normality of residuals. These checks confirm the model's robustness and reliability, ensuring its validity for the study.

## Conclusion and Recommendation

The study established a positive association between financial inclusion and entrepreneurship development in India. By employing annual data from the World Bank database, a multiple linear regression model was applied to test this assumption. Finance is a major requirement to start a business, and financial inclusion, by providing credit facilities to people, and that too at an affordable cost, helps to remove the financial hindrance in entrepreneurship development. The study provides useful insights for developing policies to infuse credit into the economy to promote entrepreneurship. However, this study has several limitations. Firstly, it employs a small sample due to the availability of data. The results could be better if a longer period is involved. Additionally, the present study measures financial inclusion in terms of the number of branches, the number of credit accounts, and the usage of credit facilities by commercial banks only. The results suggest that enhanced access to banking services significantly contributes to entrepreneurship development, emphasizing the role of financial inclusion as a catalyst for economic growth and job creation.

## Limitations

Despite its robust insights, the study is limited by its reliance on commercial banking metrics and a specific timeframe, suggesting the potential for more comprehensive future research incorporating a broader range of financial institutions and a more extended period. The multiple regression model used may not capture all the nuances of the relationship between financial inclusion and entrepreneurship development. The primary shortcoming of this research lies in its data scope and variable range, impacting the findings' generalizability and completeness. The limited availability of data leading to a relatively small sample size, covering a specific period, restricts the robustness and broader applicability of the results. Additionally, the study's focus on commercial banking metrics (like number of branches, credit accounts, and credit usage) for measuring financial inclusion overlooks other significant financial channels such as post offices, microfinance institutions, and self-help groups, especially crucial in rural and semi-urban areas. This narrow focus potentially results in an incomplete picture of the financial inclusion landscape and its true impact on entrepreneurship development, indicating the need for further research with a broader dataset and a more diverse range of financial inclusion indicators to enhance the study's findings.

## References

Bharti, U., & Verma, M. (2023). Pradhan Mantri Mudra Yojana: Transforming India by 'Funding the unfunded'. *Journal of Business Management and Information Systems, 10*(1), 31-36. https://doi.org/10.48001/jbmis.2023.1001007

Bishnoi, V. (2017). Make in India initiative: A key for sustainable growth. *Vidhya International Journal of Management Research, 5*(2). https://www.researchgate.net/publication/326081003_Make_in_India_Initiative_A_key_for_Sustainable_Growth

Claessens, S., & Perotti, E. (2007). Finance and inequality: channels and evidence. *Journal of Comparative Economics*, *35*(4), 748-773. https://doi.org/10.1016/j.jce.2007.07.002

Fan, Z., & Zhang, R. (2017). Financial inclusion, entry barriers, and entrepreneurship: Evidence from China. *Sustainability*, *9*(2). https://doi.org/10.3390/su9020203

Fareed, F., Gabriel, M., Lenain, P., & Reynaud, J. (2017). Financial inclusion and women entrepreneurship: Evidence from Mexico. *OECD Economics Department Working Papers*, (No. 1411). https://doi.org/10.1787/2fbd0f35-en

Goel, N., & Madan, P. (2019). Benchmarking financial inclusion for women entrepreneurship - a study of Uttarakhand state of India. *Benchmarking: An*

*International Journal*, *26*(1). https://doi.org/10.1108/BIJ-01-2018-0023

Inoue, T. (2019). Financial inclusion and poverty reduction in India. *Journal of Financial Economic Policy*, *11*(1), 21-33. https://doi.org/10.1108/JFEP-01-2018-0012

Jiang, L., Tong, A., Hu, Z., & Wang, Y. (2019). The impact of the inclusive financial Development index on farmer entrepreneurship. *PLoS ONE*, *14*(5), e0216466. https://doi.org/10.1371/journal.pone.0216466

Kalaivani, E., Snehaa, D., Poojashree, V., Arjun, P., & Tamilarasan, N. (2023). Startup ecosystem in India: Issues, challenges and growth. *International Journal of Advanced Science and Engineering Research, 7*(1), 60-63. https://www.researchgate.net/publication/372440651_STARTUP_ECOSYSTEM_IN_INDIA_ISSUES_CHALLENGES_GROWTH

Kumar, N. (2013). Financial inclusion and its determinants: Evidence from India. *Journal of Financial Economic Policy*, *5*(1), 4-19. https://doi.org/10.1108/17576381311317754.

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

Nanda, K., & Kaur, M. (2016). Financial inclusion and human development: A cross-country evidence. *Management and Labour Studies*, *41*(2), 127-153. https://doi.org/10.1177/0258042X16658734

Onyekwelu, P. N., Ibe, G. I., Monyei, F. E., Attamah, J. I., & Ukpere, W. I. (2023). The Impact of Entrepreneurship Institutions on Access to Micro-Financing for Sustainable Enterprise in an Emerging Economy. *Sustainability, 15*, 7425. https://doi.org/10.3390/su15097425.

Sethi, D., & Acharya, D. (2018). Financial inclusion and economic growth linkage: Some cross-country evidence. *Journal of Financial Economic Policy*, 10(3), 369-385. https://doi.org/10.1108/JFEP-11-2016-0073

Sarma, M. (2008). Index of Financial Inclusion. Indian Council for Research on International Economic Relations, New Delhi.

Wang, F. Y., & Tan, M. J. (2017). Integration of Pratt & Whitney finance and farmers' entrepreneurship: Mechanism, dilemma, and path. *Xuehai*, *06*, 151-155. https://doi.org/10.1371/journal.pone.0216466

Zogning, F. (2023). Financial inclusion, inclusive entrepreneurship, and alternative financing options. *Journal of Small Business and Entrepreneurship*, 35(1), 8-13. https://doi.org/10.1080/08276331.2022.2120345.