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RESEARCH PAPER

Financial Inclusion Status, Measurement, Determinants and Gender Gap: An Empirical Analysis of Punjab State in India

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ABSTRACT

Financial inclusion is the access to useful and affordable financial products and services, especially for the vulnerable sections of society. It is a key agenda of the government due to its potential to alleviate poverty, reduce inequalities and attain sustainable development. The government is focusing on elaborating financial infrastructure and is strengthening the supply side, but the actual usage of financial services is a challenge, especially among rural people and women. The present study is a comprehensive analysis of financial inclusion, with a primary focus on measuring its level in the rural areas of the Punjab state of India. For this purpose, primary data was collected from 500 respondents through a proportional stratified random sampling method. This research aims to elaborate the status of financial inclusion and explore the financial inclusion indicators. A Financial Inclusion Index has been developed to assess the extent of financial inclusion. Gender gap in the level of financial inclusion has been determined, and the impact of different demographic and socio-economic variables on the level of financial inclusion has been evaluated. This study highlights some important issues regarding financial inclusion and gender disparities, leading to policy recommendations aimed at enhancing financial inclusion. The study provides valuable insights into the varied aspects of financial inclusion and it will be useful for researchers, financial institutions and government policy makers.

HIGHLIGHTS

- The study reveals that around forty-five per cent of the respondents in Punjab are under the lower financial inclusion category with an average financial inclusion score of 5.2.
- The study highlights a statistically significant gender gap among the respondents.
- It is found that educational qualification, employment status, household monthly income, and access to banking services are the main parameters that positively influence the level of financial inclusion.
- The findings underscore the need for improving the demand side aspect representing the actual usage of financial products in the rural areas to enhance the level of financial inclusion.

Keywords: Financial inclusion, financial inclusion index, gender gap, determinants

Financial inclusion provides equal opportunities for all the people to access and use affordable financial products and services such as deposits, credit, insurance and pensions. Financial inclusion holds the promise to foster

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economic growth, reduce poverty and inequality, and give individuals better access to the resources needed to finance their investments, fund their consumption, and protect them against financial shocks. Financial inclusion is defined in many ways considering different parameters of access, availability, penetration, usage, cost, quality, etc. Some consider that the aim of financial inclusion is to provide financial access to vulnerable and marginalized communities (Rangarajan, 2008), while for others it is increasing the usage of financial services among individuals and firms (World Bank Report, 2014). Some definitions of financial inclusion focus on delivering financial services at affordable prices for the providers (World Bank Report, 2018), while others consider it as affordable to the consumers (Rangarajan, 2008).

Since independence, the government of India has focused on providing equal opportunities to the marginalized and economically weaker sections of society. A number of deposit, credit, insurance, and pension schemes have been launched to provide economic safeguards to the people and promote their financial stability. PM Jan Dhan Yojana, Microfinance institutions, Mudra Yojana, Direct Benefit Transfer Program, Business Correspondents, Unified Payment System, Aadhaar Enabled Transactions, Jeevan Jyoti Beema Yojana etc. are the various milestone achievements on the path of improving financial inclusion in India. Improved access to financial services promotes the inclusion of the rural masses into the formal banking system and breaks the vicious cycle of poverty. Several international organizations and institutions have also focused on improving financial inclusion among the masses around the world through various initiatives. The United Nations' General Assembly in September 2015 adopted 'Agenda 2030' to achieve 17 Sustainable Development Goals (SDGs) by the year 2030, to protect and improve the lives of everyone on this planet and financial inclusion is an enabler of seven out of these 17 SDGs. These goals act as a strong base for achieving broader socio-economic goals of employment, gender equality and economic growth (Raza *et al.* 2019; Ratnawati, 2020; Park and Mercado, 2021).

Status of Financial Inclusion in India

The Reserve Bank of India prepared a financial inclusion index for India based on three dimensions of access to financial services, along with the usage and quality aspects. It is found that the financial inclusion level in India rose from 43.4 to 56.4 between the years 2017 and 2022 (Reserve Bank of India, 2021 and Dayal, 2022). Another survey of Financial Literacy and Inclusion in India, conducted by the National Centre for Financial Education, includes all the states and the UTs (NCFE-FLIS, 2019). The results discovered that just 15% of the population of India is financially included. Credit rating agency CRISIL Ltd. prepared an index to measure financial inclusion progress in 666 districts of India, and reported that the financial inclusion score of India improved from 50.1 in 2013 to 58.0 in 2016, out of maximum score of 100 (CRISIL Inclusix, 2018). As per this study, the Punjab state is at 11th rank in the country with a financial inclusion score of 70.9 in the year 2016.

In general, financial inclusion is higher in urban areas as compared to rural areas and a good score of any financial inclusion index is mainly influenced by the urban population. However, more than 60 per cent of the total population is still living in rural areas. The present study is focused on measuring the extent of financial inclusion and gender gap in the rural areas of the Punjab state of India. The factors determining the level of financial inclusion have been explored and a financial inclusion index has been prepared. The results can be used to form certain policies that can further support the financial inclusion initiatives in rural areas.

Methodology and Data Collection

Several studies suggest that the literacy level and bank branch network significantly influence financial inclusion (Krishan, 2014; Iqbal and Sami, 2017; Shekhar *et al.* 2018; Sethy, 2023). Therefore, these two parameters were used as the basis for the selection of the geographical area for the collection of primary data. Based on the average scores of these two parameters, all the districts of Punjab were ranked, and three districts with the top, middle, and bottom average scores were selected. These three districts are Mohali, Amritsar and Mansa respectively. By using the same criteria, three blocks of each of these districts were selected. Out of these three blocks, three villages from each block, considering distance from the nearby town and distance from the nearest bank branch, were selected. Proportional stratified random sampling method is used to collect data from 500 respondents through the personal interview method by using a structured questionnaire. To measure the level of financial inclusion, a financial index is prepared based on the indicators of the World Bank Global Findex Database. The financial inclusion index consists of 12 questions regarding different indicators of financial inclusion, with scores ranging from 0 to 12 and equal weightage to each indicator. The respondents were categorized into three categories, viz. low financial inclusion category (score 0-4), moderate financial inclusion category (score 5-8), and high financial inclusion category (score 9-12).

RESULTS AND DISCUSSION

Analysis of Financial Inclusion Indicators

The positive and negative responses obtained from the respondents against 12 indicators and average financial inclusion scores are shown in Table 1. Table 1 reveals that 85.8% of the total respondents have formal bank accounts. Around 69.2% of the respondents visited their bank branch in the past 3-4 months. Seventy nine percent of respondents save some part of their income on a daily basis, against which only 18.6% invest their savings in productive assets, mutual funds, shares or pension products. Seventy four percent of them reported access to formal credit when needed in an emergency. Debit cards are owned and used by 57.4% and 43.6%, respectively. There is very limited ownership and usage of credit cards, i.e. 8.4% and 3.4%, respectively. People in rural areas are also using mobile phone payment applications for conducting daily transactions. 35.1% of the respondents have mobile payment apps and 30% use these apps for making financial transactions. 10.6% of the respondents reported that they have used online fund transfer modes. Fig. 1 is a graphical presentation of the indicator-wise responses of the respondents.

The average FI score for each indicator has been calculated out of a total score of 12. Perusal of Table 1 reveals that the average financial inclusion score for

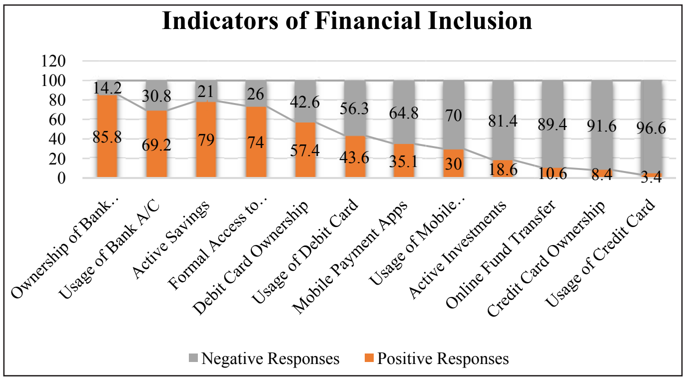
Table 1: Analysis of Financial Inclusion (FI) Indicators and Average Scores

Sl. No.	Indicators of Financial Inclusion	Positive Responses		Negative Responses	
		Number of Respondents	Average FI Score	Number of Respondents	Average FI Score
1	Ownership of Bank Account	429 (85.8)	5.8	71 (14.2)	0.97
2	Frequent Usage of Bank Account	346 (69.2)	6.4	154 (30.8)	2.4
3	Active Savings	395 (79)	5.7	105 (21)	2.9
4	Formal Access to Credit	370 (74)	6.2	130 (26)	2.2
5	Debit Card Ownership	287 (57.4)	7	213 (42.6)	2.7
6	Usage of Debit Card	218 (43.6)	7.7	282 (56.3)	3.2
7	Mobile Payment Apps Installed	176 (35.1)	8	324 (64.8)	3.6
8	Usage of Mobile Payment Apps	150 (30)	8.4	350 (70)	3.8
9	Active Investments	93 (18.6)	8.3	407 (81.4)	4.4
10	Online Fund Transfer	53 (10.6)	9	447 (89.4)	4.7
11	Credit Card Ownership	42 (8.4)	10.2	458 (91.6)	4.7
12	Usage of Credit Card	17 (3.4)	10.6	483 (96.6)	5
	Average Financial Inclusion Score	**5.2**			

Source: *Field Survey 2021.*

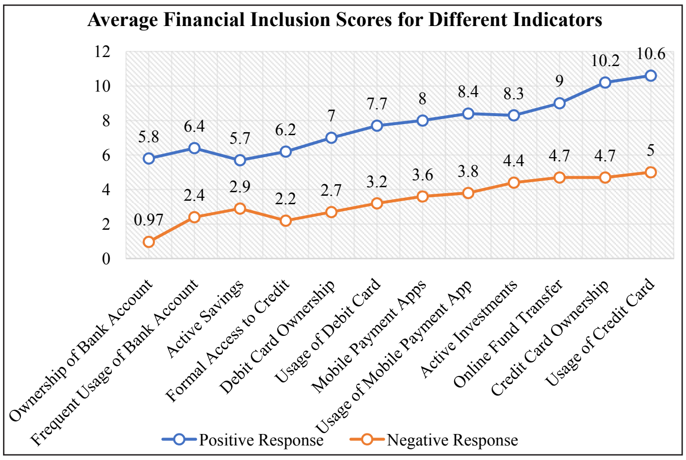
Note: *Figures in the parentheses represent the percentage of respondents.*

bank account ownership was found to be 5.8, which improved to 6.4 with frequent account usage. The average financial inclusion score of the respondents who actively invested their saved money was found to be higher than that of those who only save, with scores of 8.3 and 5.7, respectively. The average FI score of debit card users was 7.7, which further increased to 8.4 with the usage of mobile payment apps. The average financial inclusion scores of the respondents were the highest among those owning and using credit cards, i.e. 10.2 and 10.6, respectively. The average financial inclusion score in Punjab is 5.2, which is less than 50% of the total score. The low financial inclusion in rural areas is mainly because of their restricted usage of financial and digital services.



Source *Field Survey 2021.*

Fig. 1: Analysis of Financial Inclusion Indicators



Source *Field Survey 2021.*

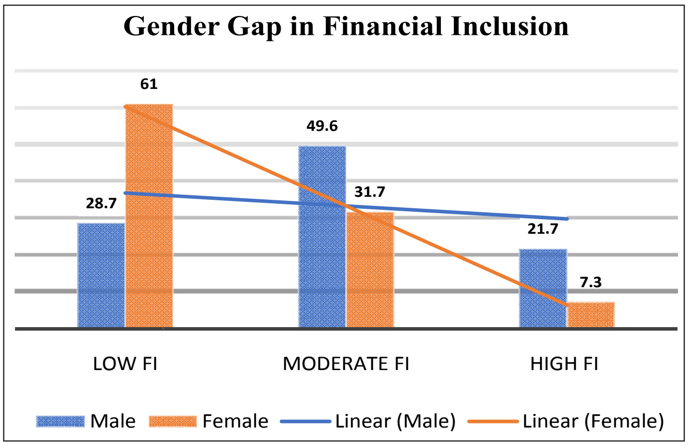
Fig. 2: Average Scores of Financial Inclusion Indicators

The average financial inclusion scores for different financial inclusion indicators are shown in Fig. 2. It shows that the average financial inclusion scores of the respondents followed an upward trend from basic financial inclusion indicators like bank account ownership to advanced ones like online fund transfers and usage of credit cards etc.

Analysis of Financial Inclusion and Gender Gap

In order to measure the extent of financial inclusion, a financial inclusion index is prepared. This index is also used to determine the extent of the gender gap in the level of financial inclusion. The results are shown in Table 2.

Table 2 shows that just 14.6% of the respondents fall under the high financial inclusion category, whereas the majority of the respondents (44.6%) fall under the low financial inclusion category. 71.3% of male respondents fall under the moderate to high financial inclusion category, compared to only 39% of female respondents. The highest 41.3% gender gap was reflected under the lower financial inclusion category, reflecting a huge gap in the percentage of financially included males and females, which reduced in higher financial inclusion levels. The majority of male respondents were found to be in the moderate financial inclusion category, while the majority of females were in the low financial inclusion category. The chi-square analysis revealed a considerable gender gap in the level of financial inclusion at both 1% and 5% levels of significance.



Source: *Field Survey 2021.*

Fig. 3: Gender Gap in Financial Inclusion

Table 2: Level of Financial Inclusion and Gender Gap

Financial Inclusion Index	Male	Female	Total	Gender Gap
Low FI (0 - 4)	73 (28.7)	150 (61)	223 (44.6)	77* (41.3)
Moderate FI (5 - 8)	126 (49.6)	78 (31.7)	204 (40.8)	48 (17.9)
High FI (9 -12)	55 (21.7)	18 (7.3)	73 (14.6)	37 (14.4)
Total	**254 (100)**	**246 (100)**	**500 (100)**	**—**

Source: *Field Survey 2021.*

Note: *Figures in the parentheses represent the percentage of respondents. The chi-square value calculated at 2 degrees of freedom is 22.7.*

The table values of chi-square at 2 degrees of freedom are 5.99 and 9.21 at 5% and 1% level of significance.

** Indicates more females than males in the respective categories.*

Fig. 3 depicts that the majority of females fall under the low financial inclusion category, whereas a significant share of males was found to be under the moderate category. The major reason for this gap is women's limited participation in the family financial matters.

Impact of Different Demographic and Socio-Economic Variables

The impact of different socio-economic and demographic variables on the level of financial inclusion has also been studied. These variables are age, gender, employment, education, household monthly income, access to banking services and distance from bank. These variables have been divided into different categories, and average financial inclusion scores were calculated for each of these categories as shown in Table 3.

Perusal of Table 3 shows that the respondents aged 25 to 45 are more financially included with an average score of six. The male respondents are comparatively more financially included and use financial services more often than females. The average scores of financial inclusion for males and females were found to be 6.2 and 4.1 respectively. The improved education level also enables an individual to confidently access and use the appropriate financial products or services in accordance with their financial needs. The study shows that the average financial inclusion scores improved significantly from 4.6 to 7.7 with higher education attainment from senior-secondary to graduation and post-graduation level. The level and type of employment also influence the level of financial inclusion. The average financial inclusion score of unemployed respondents is 3.8 whereas it is 6.9 for those who were employed. It is found that financial inclusion is prominently impacted by the financial earnings and access to banking services. The distance from bank also shows little effect on the FI score.

Regression Analysis

To quantify the impact of different demographic and socio-economic variables on financial inclusion, a linear regression equation is used. The given linear equation calculates the coefficients of financial inclusion determinants. The results of regression equation are shown in Table 4.

$$FII = b_0 + b_1\, AGE + b_2\, GEN + b_3\, EDU + b_4\, EMP + b_5\, H\_INCM + b_6\, ACC\_BANK + b_7\, DIS\_BANK + \mu$$

Table 4 shows that access to banking services is a major factor that significantly impacts the financial inclusion status of the respondents. The better the access to banking services, the more respondents were included in the formal banking system. The respondents' education level was the second major factor influencing financial inclusion. Employment levels and respondents' monthly household income also positively influenced their levels of financial inclusion. The study discovered a significant difference in financial inclusion levels between male and female respondents. Factors such as age and distance from the bank were not significantly related to financial inclusion. The R^2 value of 0.687 indicates that this regression equation explains about 68.7% of the total variation.

Table 3: Impact of Demographic and Socio-economic Variables on FI score

<table>
<tr><th colspan="3">Variables</th><th colspan="2">FI Score</th></tr>
<tr><td rowspan="3">Age</td><td colspan="2">18 to 25 years</td><td colspan="2">4.5 (22)</td></tr>
<tr><td colspan="2">25 to 45 years</td><td colspan="2">6 (50.6)</td></tr>
<tr><td colspan="2">45 to 60 years</td><td colspan="2">4.2 (27.4)</td></tr>
<tr><td rowspan="2">Gender</td><td colspan="2">Male</td><td colspan="2">6.2 (50.8)</td></tr>
<tr><td colspan="2">Female</td><td colspan="2">4.1 (49.2)</td></tr>
<tr><td rowspan="3">Education</td><td colspan="2">Uneducated</td><td colspan="2">3.7 (10.2)</td></tr>
<tr><td rowspan="2">Educated</td><td>Up to Senior Secondary</td><td rowspan="2">5.3 (89.8)</td><td>4.6 (67.8)</td></tr>
<tr><td>Graduation and post-graduation</td><td>7.7 (22)</td></tr>
<tr><td rowspan="3">Employment</td><td colspan="2">Unemployed</td><td colspan="2">3.8 (44)</td></tr>
<tr><td rowspan="2">Employed</td><td>Labourer,
Agriculturalists, and self-employed</td><td rowspan="2">6.2 (55.2)</td><td>5.6 (39.4)</td></tr>
<tr><td>Private and Government
Employees</td><td>7.7 (15.8)</td></tr>
<tr><td rowspan="4">Household Monthly Income</td><td colspan="2">Less than 10,000</td><td colspan="2">3.5 (16.6)</td></tr>
<tr><td colspan="2">10,000 to 30,000</td><td colspan="2">4.9 (62.6)</td></tr>
<tr><td colspan="2">30,000 to 50,000</td><td colspan="2">6.8 (13.2)</td></tr>
<tr><td colspan="2">More than 50,000</td><td colspan="2">8 (7.6)</td></tr>
<tr><td rowspan="3">Access to Banking Services</td><td colspan="2">No Access</td><td colspan="2">1 (14.4)</td></tr>
<tr><td colspan="2">Partial Access</td><td colspan="2">2.6 (10.6)</td></tr>
<tr><td colspan="2">Complete Access</td><td colspan="2">6.3 (75)</td></tr>
<tr><td rowspan="3">Distance From Bank</td><td colspan="2">Less than 5 km</td><td colspan="2">5.4 (52.4)</td></tr>
<tr><td colspan="2">5 to 10 km</td><td colspan="2">5.2 (35.2)</td></tr>
<tr><td colspan="2">More than 10 km</td><td colspan="2">4 (12.4)</td></tr>
</table>

Source: *Field Survey 2021.*

Note: *Figures in the parentheses represent the percentage of respondents.*

Table 4: Regression Analysis

Variable	Symbol in Regression Equation	Standardized Coefficient	t-value
Constant	b_0	-1.209	—
Age	AGE	0.002	0.068
Gender	GEN	0.103	3.346**
Education	EDU	0.257	8.284**
Employment	EMP	0.195	5.775**
Household Monthly Income	H_INCM	0.130	4.514**
Access to Banking Services	ACC_BANK	0.553	20.646**
Distance from Bank	DIS_BANK	0.013	0.495
R^2		0.687	
Adj R^2		0.682	

*** Significant at 1% level of significance;* **Source:** *Field Survey 2021.*

FINDINGS AND CONCLUSIONS

Access to finance is considered vital for inclusive and equitable economic growth. This research study provides a comprehensive analysis of financial inclusion in rural areas of Punjab, including the status of financial inclusion, elaborating financial inclusion indicators, their measurement and gender disparities. The study of various indicators of financial inclusion revealed that out of the total sample, 85.8% of the respondents owned a bank account. Whereas, only 69.2% of the respondents used it frequently. 79% of the respondents saved out of their monthly income and 74% had access to formal credit, but just 18.6% were engaged in active investments to secure their future. 30% of respondents used mobile payment applications for making financial transactions. The usage of debit and credit cards among the respondents was found to be just 43.6% and 3.4%, respectively. This represents restricted usage of financial products and services among rural people, contributing to their limited financial inclusion.

The results of the financial inclusion index revealed that a high percentage (44.6%) of respondents were found under the lower financial inclusion category whereas only 14.62% respondents are under the higher financial inclusion category. The average financial inclusion score is 5.2, which is less than 50% of the total score. The measurement of the gender gap in financial inclusion shows that the majority of the females are in the low financial inclusion category. The average scores of financial inclusion for males and females were found to be 6.2 and 4.1 respectively, which shows limited involvement of women in financial matters. The chi-square analysis reveals that there is a statistically significant gender gap among the respondents. The analysis of the impact of various demographic and socio-economic variables reveals that gender, education qualification, employment level, household monthly income, and access to banking services positively influence the level of financial inclusion. Regression analysis shows that improved access to banking services, education and employment are the most important factors to enhance the level of financial inclusion.

POLICY IMPLICATIONS AND SUGGESTIONS

The findings of the study disclosed a low level of financial inclusion among the rural respondents of Punjab. The situation is even more daunting for the females, less educated and unemployed people. Based on the findings of this study some suggestions and policy implications to improve the existing situation of financial inclusion are given below:

1. The government of the country should prioritize the development of physical financial infrastructure, increasing the number of bank branches and mobile banking solutions in the rural areas.
2. Since the usage of financial instruments is limited, the government, in collaboration with other financial institutions, should organize awareness campaigns and training programs to educate people about the availability and benefits of various financial products and financial inclusion schemes.
3. Since education and employment both significantly influence the level of financial inclusion, suitable policies should be formulated and effectively implemented to enhance the spread of education and employment opportunities among all with a special focus on women.
4. Addressing cultural norms and patriarchal systems is crucial to promote women's financial participation. Policymakers should prioritize initiatives aimed at challenging traditional gender roles and promoting gender equality in financial decision-making.

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