

Determinants of Household Participation in Formal Financial Systems: A Micro-Level Analysis of Digital Financial Services

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Abstract: *This study explores the factors influencing household participation in formal financial systems, with a focus on the role of digital financial services. Although digital technologies have improved access to financial services, many households still remain outside the formal system. Understanding the reasons behind this gap is essential for promoting financial inclusion. The study is based on primary data collected from 50 households using a structured questionnaire. It examines key variables such as income, financial literacy, digital usage, and financial inclusion using simple statistical tools like descriptive statistics and correlation analysis. The findings indicate that digital financial service usage has a strong positive relationship with financial inclusion, suggesting that households using digital platforms are more likely to access formal financial services. Financial literacy also plays a significant role, while income shows a moderate influence. Overall, the study highlights that improving digital access and financial awareness can enhance household participation in formal financial systems. The results offer practical insights for policymakers and financial institutions aiming to strengthen financial inclusion.*

Index Terms – Digital Financial services, household participation, financial literacy, formal financial institutions

I. INTRODUCTION

INTRODUCTION

Financial inclusion is one of the key elements of economic development, especially developing nations where a sizable fraction of households does not have access to formal financial system. Access to formal financial services like great savings accounts and save payment methods promotes overall economic stability and expansion in addition to improving household welfare. The trend of financial assets has changed drastically in recent years due to the growth of digital financial services such as Unified Payments Interface (UPI) based financial platforms and mobile banking. These developments have made possible for households to be the part of formal financial institutions more effectively by allowing transactional geographical barriers. The role of financial systems in promoting inclusive economic growth has gained increased attention in recent years. Efficient financial services enable households to smooth consumption, and to invest in productive activities. However, unequal access to financial services continues to create disparities in economic opportunities. In this context, improving household participation in formal financial systems is not a financial objective but a developmental priority.

The advancement of digital technology has significantly altered the structure of financial service delivery. Digital financial services have reduced transaction costs, increased ease and improved accessibility to reach the underserved populations. Despite the availability of financial services many households remain excluded due to behavioral and information constraints. Limited financial literacy, lack of trusting formal institutions and difficulty in comprehending financial products discourage participation.

Most existing studies on financial inclusion focus on macro level indicators. However, such aggregate analysis often overlooks variations at the household level.

A micro level approach provides a more understanding of how individual characteristics and decision-making process influence financial participation. Understanding the determinants of financial inclusion at the micro level is crucial for designing effective policies. Insights from this study can help policy makers to use an inductive approach for policy formulation. A particular improvement in digital infrastructure and financial literacy can significantly contribute to expanding financial inclusion.

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Financial inclusion plays a vital role in ensuring financial services and resources. Despite significant policy interventions a lot of households in developing economy remain outside the formal financial system. The digital financial services such as UPI, mobile banking and other fintech platforms have transformed the accessibility and delivery of financial services. According to Dorothea Singer and Saniya Ansar (2022), from 2011 to 2021, the fraction of adults without a

formal financial account fell from 48 percent to 24 percent. The development how made the households to communicate with formal financial institutions with cost effective methods. Despite these advancement the sparties in partition between various in socio economic groups. Income, financial literacy and access to digital infrastructure are some of the factors that affect household participation in formal financial systems. Beyond this factors, however information limitations are crucial. The inability of many households to comprehend financial products, evaluate risks and to maintain credibility with formal financial institutions, restricts their interaction with the financial system.

From microeconomic perspective, this phenomenon can be explained with the help of information assymetry , wherein word households and financial institutions have unequal access to information assymetry, resulting in less than ideal participation outcomes. Fatima (2020) in the study highlights the usage of formal financial services is very low among agricultural households, with many households using no financial products or services. According to Aderibigbe and Musa (2024), digital financial literacy place of crucial role between access to digital tools and economic outcomes.

Abiodun, Okonkwo and Bello (2023), in their study emphasis that digital finance supports entrepreneur activities by increasing liquidity and minimising credit bottlenecks.

In this situation, digital financial services play a crucial role in filling information gaps by enhancing financial transactions' accessibility, transparency, and ease. In light of this, the current study intends to investigate the factors that influence household involvement in formal financial systems, with a particular emphasis on the function of digital financial services. The study aims to offer empirical insights into how important variables like income, financial literacy, and digital usage affect financial inclusion by using a micro-level analytical approach. The study is especially pertinent in developing nations, where financial ecosystems are rapidly changing due to digital transformation, but structural and behavioural barriers still prevent inclusive participation. Through the identification of these factors, the research advances our knowledge of household financials. This study focuses on identifying the key determinants of household participation in formal financial systems with special importance to digital financial services Using a Micro level approach.

Objectives

1. To determine the key socio economic factors that influence a household involvements in formal financial systems .
2. To analyse how financial participation is impacted by digital financial services.

NEED OF THE STUDY.

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The current era witnesses the rapid expansion of digital financial services such as mobile banking and digital payments. Despite its growth, disparity exists in access and participation persist across different socio-economic groups. However the Mia availability of the services does not guarantee their adoption to all households. Household factors such as income financial literacy and access to digital infrastructure plays a decisive role in shaping participation in formal financial systems. Moreover the process of information gaps and lack of awareness restrict household from assessing financial institutions. These highlights the need for a micro level analysis that focus is on individual household behaviour.

Existing studies have largely emphasized macro level indicator of financial inclusion while limited edition has been given to the compense and friends of digital financial services and household characteristics. Therefore the study examines how digital usage , financial literacy and economic factors insurance to influence financial participation. The study addresses this gap by providing a micro level empirical analysis of the determinants of household participation in formal financial systems. It also contributes to understanding how digital financial services can reduce barriers to access and improve financial inclusion outcomes .

RESEARCH METHODOLOGY

3.1 Population and Sample

The study uses both primary as well as secondary data. primary data is collected through structured questionnaire from 50 selected households in Thrissur district , Kerala. The study focuses on households, as they are the basic units where financial decisions are made. Whether it is saving money, using banking services, or adopting digital payments, these decisions are usually taken at the household level.

The population considered for the study includes households from a specific local area (rural or semi-urban), where differences in income, awareness, and access to financial services are more visible. Studying such a population helps in understanding the practical challenges faced by households in accessing formal financial systems

3.2 Data and Sources of Data

This study is mainly based on primary data collected from households, as the objective is to understand real-life financial behavior at the ground level. A structured questionnaire was used to gather information on key aspects such as household income, level of financial awareness, usage of digital financial services, and participation in formal financial systems.

The questionnaire was designed in a simple and clear manner so that respondents could easily understand and answer the questions. Most of the questions were close-ended, making it easier to analyze the data statistically. The data was collected through direct interaction with respondents as well as through online tools like Google Forms, depending on accessibility.

To support the study and provide a broader context, secondary sources were also referred to. These include reports from institutions like the World Bank, Reserve Bank of India, and NITI Aayog, along with relevant research articles on financial inclusion and digital finance.

3.3 Theoretical framework

This study is based on Information Asymmetry Theory, a fundamental microeconomic theory that was first presented by George Akerlof in 1970. It offers a solid and generally acknowledged basis in the field of economics to explain differences in market participation. When one party to a transaction has more or better information than the other, this is known as information asymmetry. In the context of financial systems, households—especially those from low-income or marginalised groups—tend to know less about financial products, risks, and procedures than formal financial institutions. Adverse Selection: Due to uncertainty or fear of unfavourable outcomes, households with inadequate financial knowledge may steer clear of formal financial systems.

Moral Hazard: Ineffective participation or withdrawal from formal systems may result from a lack of knowledge about financial obligations.

The present study is grounded in Information symmetry theory a fundamental concept in microeconomics. In any market, information plays a crucial role in enabling individuals to make informed choices. However when one party possesses more or better information than other it creates an imbalance that can lead to inefficiencies and reduced participation.

In this study, imbalance is particularly evident between financial institutions and households. Financial institutions typically have greater knowledge about financial products, services, procedures, risks, and benefits while households—especially those from lower income or less educated backgrounds—may lack sufficient understanding of these aspects. As a result, households often perceive formal financial systems as complex, inaccessible, which discourages their participation.

3.4 Statistical tools and econometric models

This section elaborates the proper statistical/econometric/financial models which are being used to forward the study from data towards inferences. The detail of methodology is given as follows.

3.4.1 Descriptive Statistics

Descriptive Statistics has been used to find the maximum, minimum, standard deviation, mean and normal distribution of the data of all the variables of the study. Normal distribution of data shows the sensitivity of the variables towards the periodic changes and speculation.

IV. RESULTS AND DISCUSSION

4.1 Results of Descriptive Statistics of Study Variables

Table 4.1 Descriptive statistics

Variables	Mean	Mode	Variation	Standard deviation
Income	54320	52000	48000	24850
Financial Literacy	5.48	5	6	2.75
Digital Usage	0.58	1	1	0.49
Financial Inclusion	0.62	1	1	0.48

Table 1 shows the descriptive statistics of the key variables under study including income, financial literacy and financial inclusion. The main household income is 54320 with the median value of 52000 indicating a relatively balanced income distribution with slight variation. Standard deviation of 24850 suggested a high level of income disparity among households.

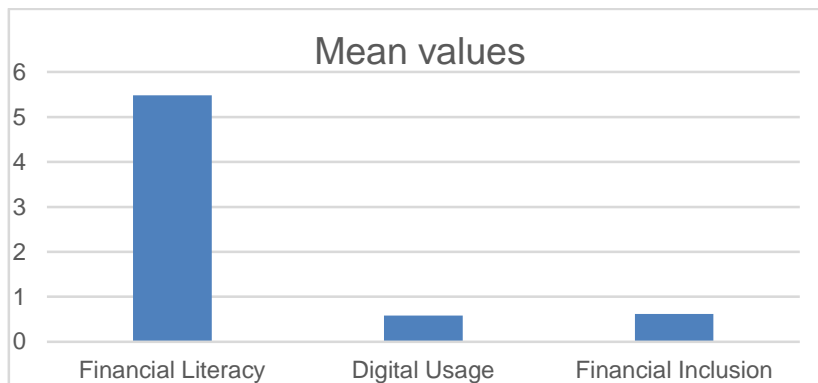


Fig 4.1 Mean value

The figure illustrates the mean values of the variables under study. Financial literacy shows the moderate average indicating a basic level of financial awareness among households. The main balance of digital usage and financial inclusion shows a considerable proportion of household are engaged in digital financial services

Table 4.2 Digital usage distribution

Category	Number of Households	Percentage (%)
users	29	58
Non users	21	42
Total	50	100

Table no. 2 reveals the data usage distribution among the selected households. It is that 58% uses digital financial services while 42% do not uses.

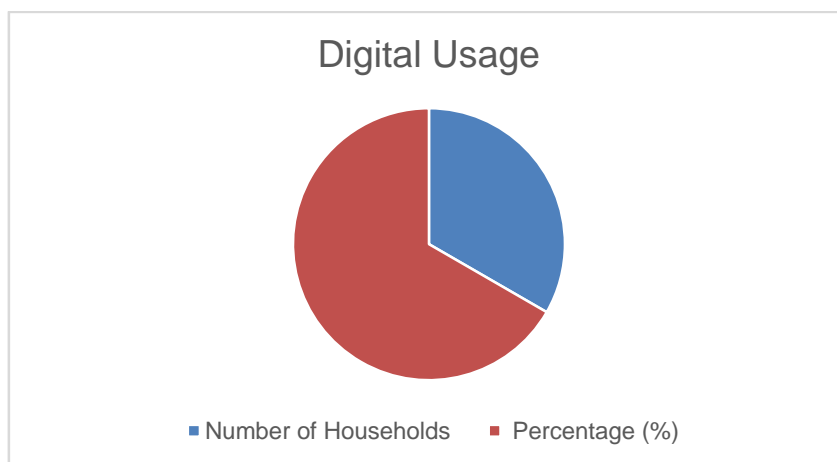


Fig 4 .2 Digital usage

Figure no. 2 is a pie chart showing the distribution of households based on their usage of digital financial services. A majority of households under study are users of digital financial services. This indicates a significant level of digital adoption among the sample population.

Table 4.3 financial inclusion distribution

Category	Number of Households	Percentage (%)
included	31	62
excluded	19	38
Total	50	100

Table no.3 shows the financial inclusion distribution. It indicates that 62% are financially into that were as 38 percentage remain excluded from the formal financial system.

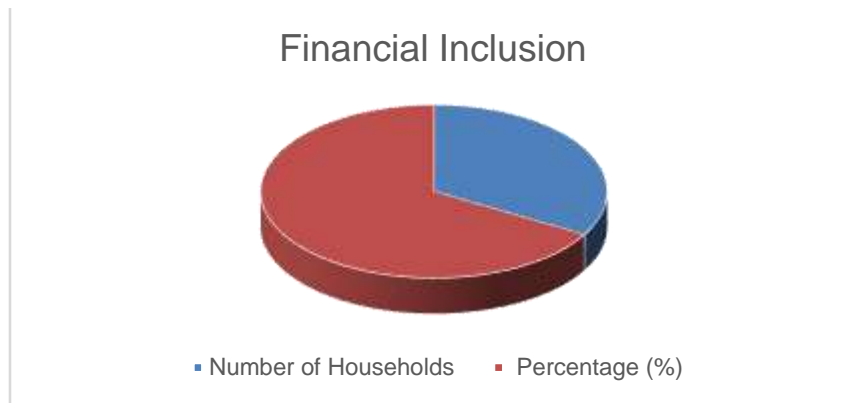


Fig 4.3 Financial inclusion.

Figure no. 3 present proportion of households that are financial included and excluded. The majority of the households in the sample are included in the formal financial system indicating progress in financial inclusion efforts .

Table 4.4 Income-wise financial inclusion

Income group	Financially included	Financially excluded	Total
Low Income	8	10	18
Middle income	13	7	20
High income	10	2	12
Total	31	19	50

Table no. 4 the pics the income wise financial inclusion. it shows that among low households only 8 out of 18 are financial included and 10 are excluded indicating lower participation. In the middle income group 13 out of 20 are included and among the high income houses 10 out of 12 household are financially included.

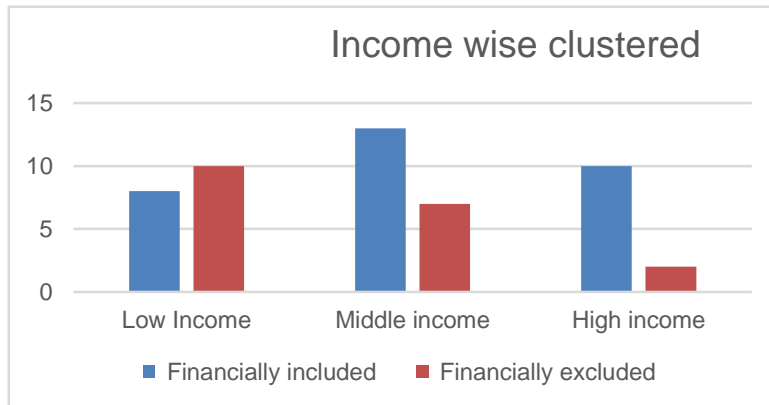


Fig 4.4 Income-wise clustered

Figure no. 4 is a clustered bar chart which demonstrates the relationship between income levels and financial inclusion. Higher income level show greater levels of financial inclusion compared to lower income groups. However financial inclusion is not entirely dependent on income as some lower income households are also included

Table 4.5 correlation matrix

Variables	Income	Financial literacy	Digital usage	Financial inclusion
Income	1.00	0.46	0.41	0.43
Financial Literacy	0.46	1.00	0.57	0.61
Digital Usage	0.41	0.57	1.00	0.72
Financial Inclusion	0.43	0.61	0.72	

Table no 5 shows the correlation Matrix which depicts that digital usage has a positive correlation of 0.72 with financial inclusion, indicating that household using digital services are more likely to be financially included. Financial literacy also shows are positive correlation with financial inclusion (0.62) and income as a moderate positive relations with financial inclusion. Financial literacy and digital usage are moderately correlated.

Table 4.6 Financial Inclusion Index

Category	Index Value
Mean FII	0.62
Minimum FII	0
Maximum FII	1

Table no. 6 shows the financial inclusion index indicates that the main financial inclusion index is 0.62 suggesting a moderate level of financial inclusion among the sample houses.

Table 4.7 Digital financial services index summary

Category	Index Value
Mean DFS	0.58
Minimum DFS	0
Maximum DFS	1

Table no. 7 shows the digital financial services index. The Digital financial services index scores 0.58 indicating moderate level of digital financial adoption. Maximum DFS index scores 1 and minimum is 0.

Table 4.8 Mean comparison

Variables	Income	Financial literacy	Digital usage	Financial inclusion
Digital users	62000	6.5	1	0.80
Non users	42000	4.2	0	0.35

Table no. 8 shows the main comparison between users and non users of digital financial services. It will start a digital users have a higher average income of 62000 compared to non uses of 42000 indicating that incoming influence digital adoption.

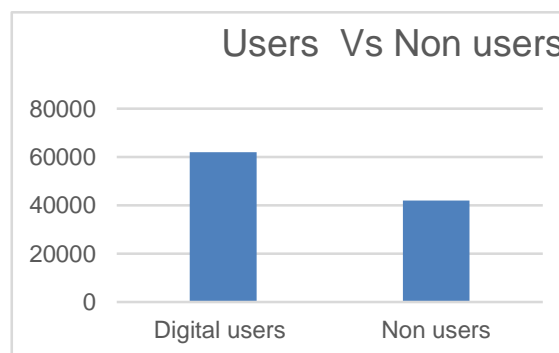


Fig 4.5 Users Vs Non-users

Figure no. 5 depicts the comparison between digital users and non users. Digital users exhibit higher levels of financial inclusion and in some cases better financial literacy and no incomes compared to non users.

CONCLUSION

This study set out to understand why some households actively use formal financial systems while others remain outside them, even when financial services are increasingly available. By focusing on income, financial literacy, and digital financial service usage, the study provides a realistic picture of how households make financial decisions in everyday life.

The findings show that digital financial services play a key role in improving financial inclusion. Households that use digital platforms such as mobile banking and online payments are more likely to be connected to formal financial systems. Financial literacy also emerges as an important factor, as households with better understanding of financial concepts tend to make more informed and confident financial choices. While income does influence participation, it is not the only deciding factor, as even lower-income households can be financially included when supported by digital access and awareness.

Overall, the study highlights that financial inclusion is not just about availability of services, but also about awareness, accessibility, and ease of use. Improving digital infrastructure and strengthening financial education can go a long way in bringing more households into the formal financial system. These insights can help policymakers and financial institutions design more practical and inclusive strategies for expanding financial participation.

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