How Does Youth's Financial Literacy Influence Their Financial Inclusion? A PLS-SEM Approach

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Abstract

Purpose : The study examined the linkages between the psychology of youths toward financial literacy and their level of financial inclusion.

Methodology : Fresh data were collected from 381 youths residing in the Delhi-NCR region from January 2022 to April 2022. A 5-point Likert scale questionnaire was developed using purposeful sampling, and its goodness of fit was assessed using SMART-PLS employing partial least squares-structural equation modelling (PLS-SEM). Path analysis was employed for hypothesis testing to examine the interaction of four independent variables.

Findings : As per the study's findings, financial attitude and financial behaviour were strongly related to the youth's financial inclusion rather than financial education and awareness. The study's conclusions clarified the investor's psychology and enhanced financial inclusion among youths.

Practical Implications : The research findings opened up additional avenues for raising young people's financial literacy. Regulatory bodies in India should prioritize enhancing the young individuals' understanding of finance. Despite having financial attitudes and behaviors, they had a limited grasp of finance, as seen by their limited interest in investment opportunities. This study provided valuable insights on how to improve individuals' financial literacy.

Originality : Unlike prior work on financial literacy, this study focused on the level of financial literacy among youths to understand their economic behaviour and attitudes.

Keywords : **financial literacy, financial inclusion, financial literacy, financial awareness, financial behaviour, youth, PLS-SEM**

JEL Classification Codes : C8, G2, G4

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The G20 acknowledges that financial inclusion is vital in combating poverty, and its policies and activities are becoming increasingly significant in supporting inclusive development (World Bank, 2021). Demirgüç-Kunt et al. (2022) confirmed that account ownership is more prevalent among older persons, specifically individuals aged 25 and beyond, compared to young adults, who fall within the age range of 15 to 24. The young generation encounters challenges and ambiguity as they transition into adulthood, irrespective of their social, demographic, or geographic context. Compared to less susceptible age groups, this generation typically becomes the household leader considerably younger, making the transition from childhood to adulthood exceedingly challenging. Young people will reach their pinnacle in the following 20 years. While this remarkable population growth may be seen as an opportunity, if their needs are not addressed, it could also be a significant threat to their future, given the current state of poverty and the lack of opportunities for young people.

Problem Statement and Gaps

Access to social and financial resources is significant in empowering young people to make financial decisions, such as education and health, escape poverty, and establish their businesses (Nizam & Rashidi, 2025; Shihadeh, 2018). Additionally, Liu, Xie et al. (2022), Liu, Yao et al. (2022), and United Nations Youth (n.d.) argued that practitioners and experts widely acknowledge financial inclusion (FI) as a potent instrument for promoting inclusive economic growth in emerging and developing countries. However, the financial component works exceptionally well for young people when combined with instruction in financial literacy, entrepreneurial, and mentorship programs. Even with these advantages, it is estimated that fewer than 5 percent of young people have savings accounts since they have difficulty accessing financial services (Manyenga, 2023). Many financial service providers (FSPs), such as banks, credit unions, or microfinance institutions, poorly understand or serve the youth market.

Furthermore, regulatory frameworks are not established with young people's rights or inclusion in mind. Young people in resource-constrained environments, especially those from lower-income households, still face barriers to obtaining and utilizing formal financial services (Chowa et al., 2015). Additionally, young individuals from numerous economically disadvantaged nations exhibit insufficient proficiency in financial literacy (Lusardi et al., 2010). Vaahtoniemi et al. (2023) pointed out that it is especially alarming to see that today's kids have low levels of financial literacy because they will have to deal with the long-term effects of making financial decisions without sufficient information. Based on the above premise, it is indicated that an optimal degree of FI among young people yields advantages for both the community and its economic development and individuals, and financial literacy is key to this. With this backdrop, the present study attempts to understand how the financial behavior of youth or their psychology influences their level of financial inclusion. Given these circumstances, the current study aims to investigate the relationship between financial literacy and young adults' financial inclusion, which has not been the subject of prior research. Moreover, attempts have been made to examine the effect of financial awareness on financial inclusion, which has been ignored in previous studies. Additionally, this study needs an hour in the present era, given that young individuals constitute a substantial portion of the population and play a vital role in every nation's economic advancement; it is essential to prioritize enhanced FI for this demographic (Babajic et al., 2018).

Contribution and Research Objectives

The present study extends the literature in three important ways. First, it examines the profound effect of the financial behavior of youth on their level of financial inclusion. A few studies have addressed various

demographic aspects (Ozili, 2024), but youth as a sample has been untouched in prior studies. Hence, it is a significant contribution to financial inclusion literature. Second, as postulated by Lusardi et al. (2010) and Zahid et al. (2024), financial literacy is the prerequisite for achieving financial inclusion by enabling individuals' access to formal financial services and products effectively. In this vein, the current study examines the interrelationship between different aspects of financial literacy (Lusardi & Mitchell, 2014), namely, financial attitude, financial behavior, financial awareness, and financial knowledge of financial products and services. Third, the authors attempted to collect fresh data on financial inclusion among youth as defined by the population aged between 15 and 24 years, per the metadata glossary of the World Bank (World Bank, n.d.) and OECD (2020). Fourth, attempts have been made to examine the effect of financial awareness on financial inclusion, but prior research has been overlooked. Keeping the above contributions in mind, three research objectives have been framed. First, to examine the association between the youth's cognition, proxied by financial attitude and behavior, and assess the level of financial inclusion. Second, to understand the association between financial awareness and financial knowledge at the level of financial inclusion. Third, to suggest measures to policymakers and financial institutions for enhancing the coverage of financial services under different strata and groups of society.

Review of Related Literature

Youth

As per UNESCO (n.d.), "Youth is best understood as a period of transition from the dependence of childhood to adulthood's independence and awareness of our interdependence as community members." The OECD (2020) and World Bank have established a definition for youth as individuals between the ages of 15 and 24. The United Nations has adopted the definition of youth provided by individual member states for national-level programs. The African Youth Charter (n.d.) defined "youth" as anyone aged between 15 and 35. In India, according to the Government of India (2022), youth are individuals who fall within the age range of 15 to 29 years.

Financial Literacy : Conceptual Framework and Definition

John Adams initially used the phrase "financial literacy" in 1787 in a letter to Thomas Jefferson in the United States. Lusardi and Mitchell (2011) understood financial literacy as equivalent to financial knowledge, while Lusardi (2008a, 2008b) defined it as the capacity to perform basic computations and understand fundamental financial concepts.

The Organisation for Economic Co-operation and Development (OECD) provided a generally acknowledged thorough definition of financial literacy conceptualized as "knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge and understanding to make effective decisions across a range of financial contexts, to improve the financial wellbeing of individuals and society, and to enable participation in economic life" (OECD, 2014a, 2014b). The OECD concentrated on three fundamental, all-encompassing aspects of financial literacy: knowledge, behavior, and attitude (OECD, 2005, 2013, 2014a, 2014b). Most researchers use the OECD and Lusardi's conceptual frameworks for financial literacy (for instance, Agarwalla et al., 2015).

Research has demonstrated that people with a high level of financial literacy are more likely to exhibit superior numeracy skills (Atkinson & Messy, 2012; Lusardi & Mitchell, 2011) and savings (Klapper et al., 2012). Above all, age is a significant factor in explaining financial literacy level (Garg & Singh, 2018), and these findings triggered the examination of the literacy level among youths. In contrast, Pulk and Riitsalu (2024) investigated the

role of national culture in financial literacy and found that individualism and youth financial literacy scores are strongly correlated. The Schwartz embeddedness dimension holds even after controlling for several variables. Similarly, Bii et al. (2024) found financial literacy to be a significant factor in financial inclusion. Additionally, there have been numerous studies that measured the level of financial literacy, for instance, Anumol and Malavika (2024), Anuwar et al. (2024), Chock and Chin (2024), Mushtaq et al. (2024), and Zahid et al. (2024).

Dimensions of Financial Literacy

The OECD model addressed three comprehensive components of financial literacy: financial behavior, financial attitude, and financial knowledge. Financial knowledge and literacy are frequently used interchangeably (Lusardi & Mitchell, 2011). Huang et al. (2013) regarded a person's understanding of financial concepts as their financial knowledge. Ajzen (1991) defined a person's financial attitude as their propensity to behave in a particular manner due to their economic and non-economic beliefs about the future. On the other hand, financial behavior is how individuals manage their money and make financial decisions. This can be attributed to how individuals adopt investment strategies, plan their finances, etc. All these factors are imperative to measure financial literacy. Further, Rehman and Mia (2024) argued that financial literacy is a multifaceted topic, and the factors that influence it can be distilled into seven categories: technological, demographic, sociological, financial, psychological, and socioeconomic. Age is one of the significant demographic factors. Similarly, Mushtaq et al. (2024) concluded that information and communication technology (ICT) substantially accelerated financial literacy, increasing financial inclusion. Therefore, based on the above reasoning, we proposed the following research hypothesis:

- **H0 :** Financial literacy significantly affects the financial inclusion of youths.

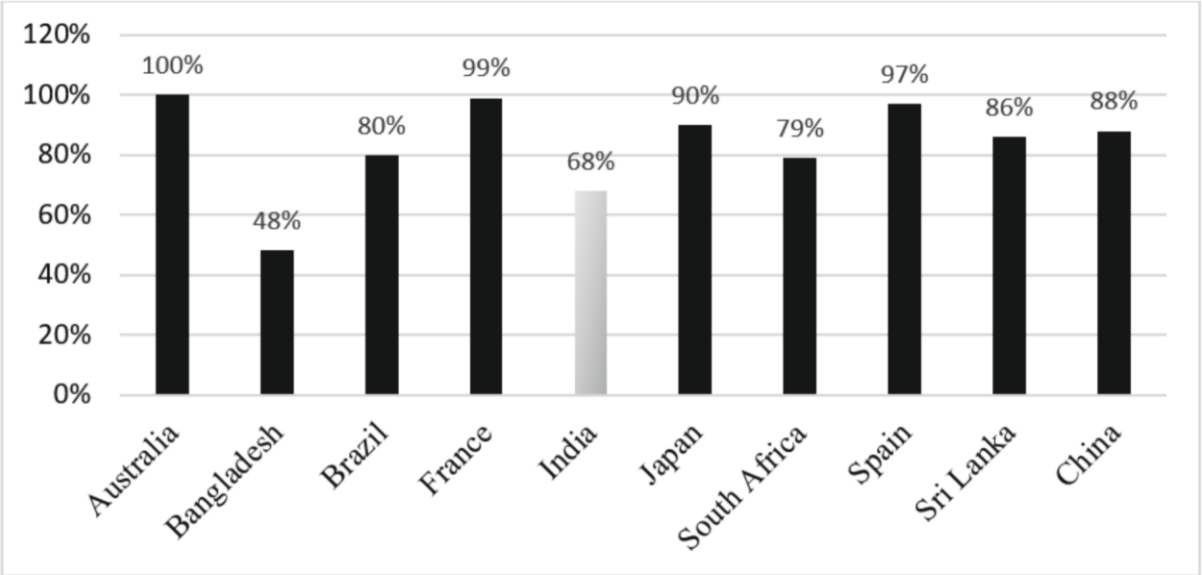
Further, we proposed the following sub-hypotheses:

- **H1 :** Financial behavior significantly affects the financial inclusion of youth.
- **H2 :** Financial attitude substantially affects the financial inclusion of youth.
- **H3 :** Financial knowledge significantly affects the financial inclusion of youth.

Financial Literacy and Financial Inclusion

Researchers and academics have done several studies on developing and less developed nations since financial inclusion and literacy are crucial for economic growth and sustainable development. Additionally, prior research has demonstrated that financial literacy is one of the key factors influencing financial inclusion (Kavita & Suman, 2019; Kuri & Laha, 2011). Mazumder (2013) found that a lack of financial education is one of the biggest challenges in achieving financial inclusion. Vaghela et al. (2023) investigated the effect of financial literacy on different aspects of customer behavior to identify the probable link with financial inclusion. Additionally, review studies conducted in the past indicated the significance of this heme in the present era (Khongwir & Sharmiladevi, 2023). The data from the World Bank Global Findex database 2021, published by the World Bank (2021), as shown in Figure 1, depicts the number of bank accounts owned by young individuals aged between 15 and 24 years in various regions. India's account ownership in this region remains at just 68%, lower than that of other emerging nations. This is a cause for concern. The World Bank released research in 2021 that examined the factors contributing to low levels of bank account ownership among young individuals.

Figure 1. ***Number of Accounts in % as per Age (15–25 years) in Various Regions of the World***



Source : World Bank Global Findex database 2021 accessed through https://openknowledge.worldbank.org/bitstream/handle/10986/37578/9781464818974.pdf?_gl=1*1rjya20*_gcl_au*MTIyNjIzMTM4Ni4xNzE2Mzc1NzMy

Various academicians and researchers have tried to study the barriers that youth face in accessing formal financial services. A recent study by Gupta et al. (2025) emphasized behavioral biases and examined the impact of financial literacy on investment decisions. On a similar note, a study by Nag and Shah (2022) identified the influence of financial literacy on stock market decisions specifically for Gen-Z groups. Similarly, Sunil and Kumar (2025) investigated the effect of financial literacy on the behavior patterns of millennials. Mbugua et al. (2023) identified several barriers that hinder the young population from receiving formal financial services. First, policies and regulations, such as KYC norms, age limitations, digital connectivity, specifically in rural areas, and a lack of credit history impede loan approval. Second, supply-side challenges, such as information asymmetries, a lack of awareness about serving youth, and risk aversion toward serving youth, deter them from accessing the services. Third, demand-side challenges such as a lack of financial literacy pose them with a greater risk of financial exclusion. Due to social, cultural, and religious conventions, youth face additional limitations in accessing official financial services. As mentioned in the United Nations (n.d.), the findings from the study conducted in 2013 found that young individuals had a 33% lower probability of possessing a savings account compared to adults, and their likelihood of saving money decreased by 4% in a formal financial institution.

Legal constraints, significant transaction costs, and negative preconceptions about teenagers are the reasons attributed to these factors. To enhance youth financial inclusion, it is necessary to establish regulatory frameworks and inclusive policies favorable to young people that safeguard their rights. Similarly, OECD (2020) undertook a study to investigate the reasons behind the higher likelihood of financial exclusion among young individuals and the elements that contribute to this exclusion. Subsequently, it examined the possibilities and difficulties associated with promoting the inclusion of young people in digital financial services. The findings revealed that the personal financial circumstances of several young individuals, such as youth unemployment and budgetary constraints, significantly impact their ability to achieve financial inclusion. The COVID-19 pandemic has worsened the incidence of youth unemployment. As a result, vulnerable young people—such as those working in the unorganised sector or on precarious contracts—are more susceptible to financial instability.

SEEP (2013) in their study documented that young individuals frequently experience modest and sporadic

revenue streams derived from seasonal employment or financial support provided by their parents and relatives, further aggravating their financial instability and leading to lower financial access. In South Africa, the youth population has a higher probability of engaging in informal employment (23%), experiencing unemployment (32%), and relying on remittances (74%), which leads to a lower level of financial Inclusion (Finmark Trust, 2018). A study conducted by the National Survey for Financial Inclusion (2018) in Mexico revealed that 22.5% of young adults did not possess a bank account or debit card due to financial constraints or inadequate income. Similarly, 20.7% cited the exact reasons for not having insurance coverage.

The report added that young individuals showed no keenness in financial services and did not perceive them as beneficial. Research, such as the OECD PISA financial literacy evaluation, has found that lower levels of financial literacy are a significant factor contributing to financial exclusion among young people globally. Additionally, it stated that not only do young people lack financial education, but they also lack the skills and understanding of financial services and goods (Deshpande, 2011). A significant number of studies, for instance, Khan et al. (2022) and Lusardi et al. (2010), stressed that having a good understanding of financial concepts and skills is essential for attaining financial inclusion as it empowers individuals to utilize and access formal financial services and products efficiently. The above findings demonstrate the importance of financial literacy in achieving financial inclusion, which is the motive of the present study. Moreover, Grohmann et al. (2018) examined the impact of financial literacy on financial inclusion across countries and found a positive effect. Similarly, Kodongo (2018) and Grohmann and Menkhoff (2017) concluded that financial literacy could enhance formal financial access. Bire et al. (2019) focused on the role of financial training in strengthening financial literacy for deepening financial access. Interestingly, cognition has influenced the relationship between financial literacy and financial inclusion in Uganda (Bongomin et al., 2018).

The above review indicates that most studies have examined the influence of three dimensions, namely financial attitude, financial behavior, and financial knowledge, on the financial inclusion level of different strata of societies. However, previous studies have ignored one of the important dimensions: financial awareness (OECD, 2013). To optimize financial administration, individuals must be aware of the importance of making prudent financial decisions (Tang, 2024), as it plays a vital role in robust financial decisions and access to financial services and products (Nga et al., 2010). With this backdrop, we have identified this as a gap and tried to examine how financial literacy might help young people become more financially included. Therefore, the following hypothesis is framed:

- **H4 :** Financial awareness significantly affects financial inclusion in youths.

Methodological Framework

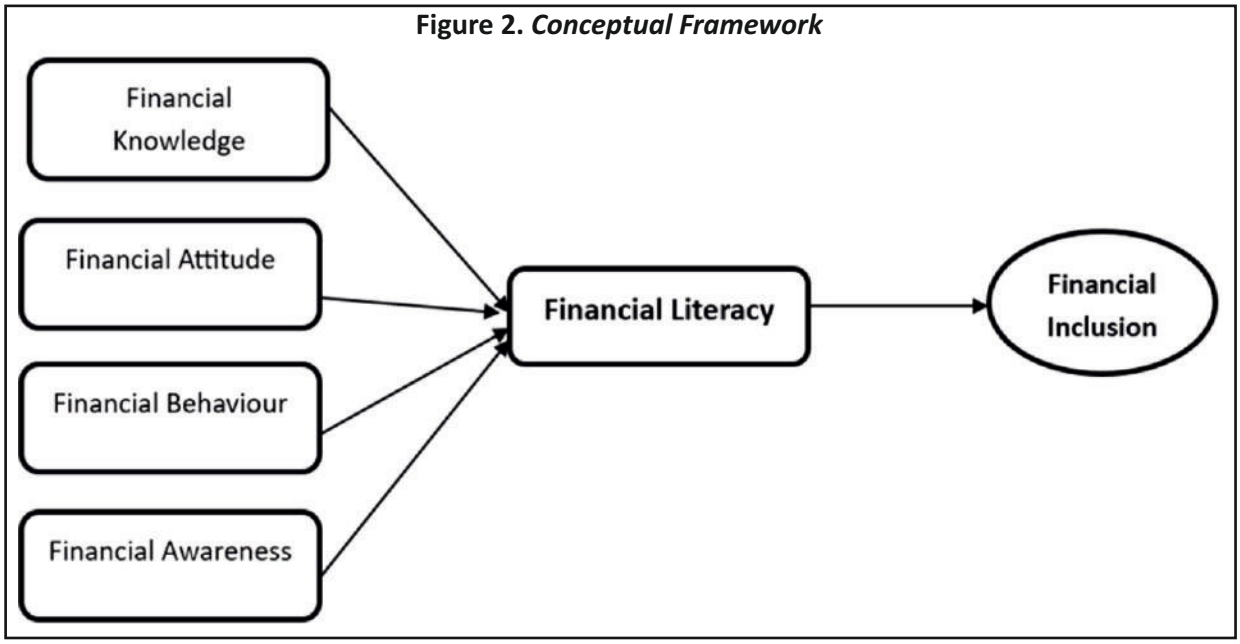
Overview

The present analysis was motivated by the fact that the drivers of financial knowledge, attitude, behavior, and awareness influencing financial inclusion varied greatly. In this relationship, financial attitude, behavior, knowledge, and awareness act as independent variables (IV), and the influence they exert on financial inclusion is the dependent variable (DV), as shown in Figure 2.

Research Design and Sample Selection

The study explores the linkages between the behavior and psychology of youths and their level of financial inclusion. The study aims to discover the cause-and-effect relationship between variables where the variables are

Figure 2. ***Conceptual Framework***



latent. Therefore, based on the nature of the data, partial least squares-structured equation modelling (PLS-SEM) is used in the study to estimate the relationship between financial behavior, financial attitude, financial awareness, and financial knowledge toward financial inclusion. Hence, the study is quantitative because the structural equational modelling is applied to test the assumptions and arrive at conclusions. When multiple constructs exist in the model and a small sample size, PLS-SEM aids assessment (Hair et al., 2017). Purposive sampling was utilized to create a sample which was surveyed with a 5-point Likert scale questionnaire, and the goodness of fit was determined using SMART-PLS employing partial least squares-structured equation modelling (PLS-SEM). The sampling frame was random young adults from different universities and colleges, and respondents between the ages of 15 and 24 were the sampling units. The sample size was determined to be 500.

Data Collection and Tools

A questionnaire was created and standardized as a suitable tool to measure the independent and dependent variables. Questions were created using a 5-point Likert scale following the concepts and definitions provided by the World Bank. The questionnaire was then utilized in a survey research design, specifically employing PLS-SEM analysis. The current study was conducted among young individuals in Delhi, India, from January 2024 to July 2024 to evaluate their level of financial literacy. The respondents were all between 15 and 24 years old. This study employed a descriptive research design. We conducted an organized online survey. The sample consisted of 372 participants from Delhi. Although we delivered the survey to over 500 individuals, 412 questionnaires were returned to the study, of which 381(78%) were completed. We used these 381 for additional analysis. Table 1 presents the attributes of the sample (sample framework) gathered for the study.

A pilot study was done on 42 datasets to check the scale's internal consistency. Further, the reliability of the data was assessed using Cronbach's alpha (0.78), but the data was not normally distributed. Using the SMART PLS v.3.3.3 software, SEM analysis was performed as the final step to validate the suggested conceptual model. The study used Smart PLS version 3.3.9 (Ringle et al., 2015) to develop the path model. The subsequent section discusses the results and the model designed using PLS-SEM.

Table 1. ***Demographic Details of the Respondents***

Demographic	*N*	%
Age		
Between 15 and 20	129	33%
Between 21 and 24	252	66%
Education		
Senior Secondary	129	33%
Graduation	152	39%
Post-graduation	100	26%
Diploma	NA	NA
Gender		
Male	268	70.34%
Female	113	29.66%

Analysis and Results

The data analysis is bifurcated into two key sections. The initial step involves verifying the structural composition of the measurement items about the determinants of financial inclusion, such as financial attitude, financial behavior, financial knowledge, and financial awareness. The subsequent step examines the relative significance of financial attitude, financial behavior, financial knowledge, and financial awareness toward financial inclusion. The measurement model aids in determining the characteristics of the scales, while the structural model is used to establish the connections between the variables.

Measurement Model

The measurement model can be evaluated using construct reliability, convergent validity, and discriminant validity. Table 2 shows that composite reliability (CR) values exceed the prescribed threshold of 0.7. The Cronbach's alpha coefficient for all constructs falls within the range of 0.770 to 0.893. The composite reliability values range from 0.881 to 0.948, indicating a good construct validity and reliability of the model, which are considered acceptable. The convergent validity of the constructs is assessed through average variance extracted (AVE) and factor loadings (Fornell & Larcker, 1981). The value should surpass the minimum criterion of 0.5,

Table 2. ***Measurement Model***

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Financial Inclusion	0.854	0.856	0.932	0.873
Financial Knowledge	0.950	0.955	0.956	0.644
Financial Behavior	0.950	0.953	0.95	0.563
Financial Awareness	0.953	0.959	0.958	0.638
Financial Attitude	0.940	0.959	0.948	0.591

Source : Author's computation using PLS-SEM.

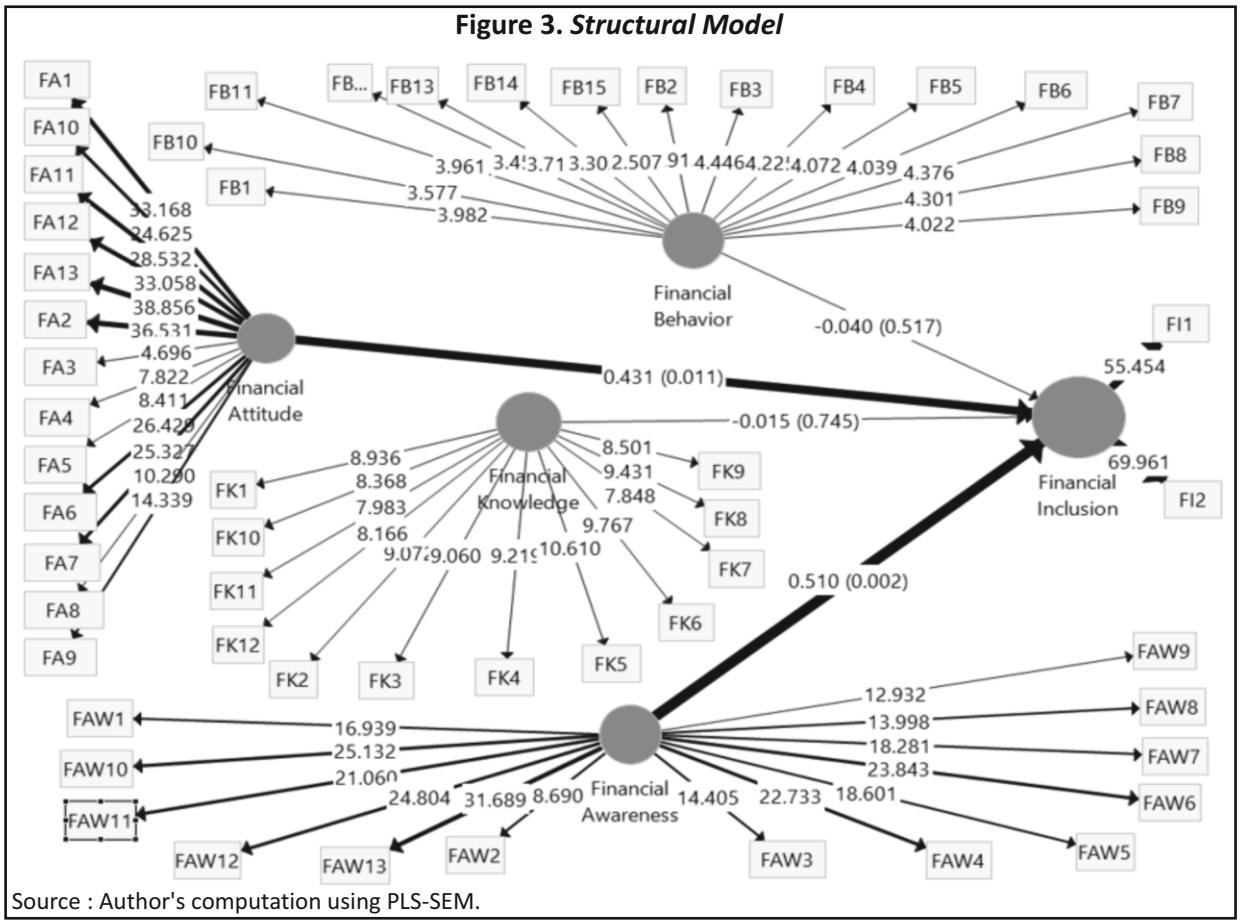
Table 3. ***Heterotrait-Monotrait Ratio (HTMT)***

	Financial Attitude	Financial Awareness	Financial Behavior	Financial Inclusion	Financial Knowledge
Financial Attitude					
Financial Awareness	0.966				
Financial Behavior	0.350	0.165			
Financial Inclusion	0.959	0.978	0.153		
Financial Knowledge	0.307	0.285	0.263	0.255	

Source : Author's computation using PLS-SEM.

showing the explained variance. The factor loadings in the present study range from 0.611 to 0.914, while the average variance extracted (AVE) falls between 0.502 and 0.813.The average variance extracted (AVE) exceeding 0.50 indicates strong convergent validity of the variables. The discriminant validity was assessed by comparing the square root of the average variance extracted (AVE) values. The square root of AVE should have a greater magnitude than the inter-construct correlations (Table 3). The findings validate that the reflective constructs demonstrate discriminant validity.

Figure 3. ***Structural Model***



Source : Author's computation using PLS-SEM.

Structural Model

The measurement model results indicate that the construct reliability, convergent validity, and discriminant validity are all within the permissible range. The structural model results illustrated in Figure 3 indicate the beta values between the drivers of financial inclusion and financial knowledge, financial awareness, financial attitude, and financial behavior.

Path Analysis Results

Path analysis assesses the proposed hypothesis. The outcome of path analysis is presented in Table 4. The values exhibited statistical significance in the associations between the drivers of financial inclusion with financial attitude (**, $p < 0.05$) as well as with financial behavior (**, $p < 0.05$). Financial knowledge (0.745, $p > 0.05$) and financial awareness (0.517, $p > 0.05$) do not indicate a significant association with the dependent variable, financial inclusion. Therefore, the results of this study corroborate hypotheses H1 and H2 while contradicting hypotheses H3 and H4. Therefore, hypotheses H1 and H2 are confirmed, while H3 and H4 are refuted (Figure 3). The value of R^2 at 82.4% shows substantial power to explain the variation in financial inclusion based on predictive variables.

Table 4. *Results*

Endogenous Construct	Exogeneous Construct	Sample Mean *(M)*	Standard Deviation (STDEV)	*t* - Statistics (|O/STDEV|)	*R* Square	Remark
Financial	Financial Attitude	0.402	0.169	2.543**	82.4%	Supported
Inclusion	Financial Behavior	0.531	0.162	3.158**		Supported
	Financial Knowledge	–0.026	0.062	0.649		Not Supported
	Financial Awareness	–0.010	0.045	0.325		Not Supported

Source : Author's calculation using PLS-SEM.

Discussion and Implications

This research aimed to determine the correlation between the financial inclusion of young people in India and financial literacy. Three significant attributes were examined to assess financial literacy: financial knowledge, financial activity, and financial attitude. Additionally, two other factors that previous studies had not addressed were identified: financial awareness and financial skill. The study findings suggest a robust correlation between young individuals' financial attitude and financial behavior and their degree of financial inclusion. Previous research (Sari et al., 2023) has supported these findings, demonstrating a substantial correlation between financial behavior and financial inclusion in small and medium enterprises (SMEs) in East Java. The study's findings confirm the substantial link between youths' financial attitudes and financial literacy, leading to increased financial inclusion. The outcomes of this study have been corroborated by previous research studies (Arora, 2016; Calamato, 2010; Haque & Zulfiqar, 2015; Huston, 2010; McCormick, 2009).

The study found that financial awareness alone is insufficient for assessing financial literacy in youth. It highlighted the significance of financial attitude and behavior, which both play a crucial role and benefit youth financial literacy. The results also identify a strong and statistically significant correlation between financial behavior and youth financial literacy. By developing a healthy financial mindset and prudent financial behavior, concerned authorities and policymakers can improve the financial literacy of their younger population. Therefore,

both research hypotheses have been accepted in the study. This finding aligns with past studies on financial literacy, which indicate that youth tend to possess less financial understanding. The research insights provide further possibilities for improving the financial literacy of young individuals. The results indicate that financial literacy governing bodies in India must prioritize enhancing the financial understanding of young individuals. Although they possess financial attitudes and behaviors, they are not sufficiently cognisant, competent, and financially aware, as clearly visible through their limited interest in investment opportunities. This study provides valuable insights on how to improve individuals' financial literacy.

Limitations of the Study and the Way Forward

The present investigation is not devoid of limitations. Initially, the research has exclusively focused on the youth population of Delhi, limiting its generalizability to other cities within the country. Furthermore, this study focuses on financial literacy among adolescents, which may not be directly relevant to working youth, men, students, and other demographics. Furthermore, the sample size utilized for the investigation is exceedingly limited. Finally, the study only considered three financial literacy variables, neglecting other crucial factors, such as socialization agents, cultural influences, and concerns relating to family and environment. Future studies can look into these factors. Using a self-structured questionnaire for the evaluation increases the likelihood of bias. The constraints of the present research can serve as a basis for future qualitative research in financial literacy about gender disparities, employed young individuals, students, and other relevant groups. Additionally, the findings of this research are based on primary and secondary data, both of which have inherent limitations. Researchers can try to lessen these limitations and include a sizable sample size in subsequent investigations.

Authors' Contribution

Dr. Priyanka Tandon and Dr. Pali Gaur conceived the idea and developed qualitative and quantitative designs for the empirical study. Dr. Priyanka Tandon extracted research papers of high repute, filtered them based on keywords, and generated concepts and codes relevant to the study design. Dr. Anurag Bhadur Singh verified the analytical methods and supervised the study. Dr. Nikhil Yadav and Dr. Anurag Bhadur Singh collected the data. Dr. Pali Gaur conducted the data analysis using PLS-SEM. Dr. Priyanka Tandon wrote the manuscript in consultation with the other authors.

Conflict of Interest

The authors declare no affiliations with or involvement in any organization or institution having any financial interest or non-financial interest in the material or topic of this manuscript.

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