

IMPACT OF FINANCIAL KNOWLEDGE ON FINANCIAL INCLUSION

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ABSTRACT

Financial Inclusion, a significant concept of finance makes various financial products and services accessible and affordable to all individuals and businesses, especially those excluded from the formal financial system. One of the leading forces affecting people's ability to access financial services is Financial Knowledge. The main aim of the study is to test and validate the Financial Knowledge and Financial Inclusion model through Structural Equation Model (SEM) and Confirmatory Factor Analysis (CFA) using AMOS software among 356 college students in Chennai. Survey method was used in the study. Weighted Mean, t-test and Karl Pearson's Correlation were used for the purpose of analysis. No significant difference in Financial Knowledge based on gender and stream of study were found. Financial Knowledge and Financial Inclusion were found to be positively correlated and the proposed model was found to be a good fit.

KEYWORDS: Financial knowledge, Financial Inclusion, Financial Literacy, Financial services

Introduction

Financial knowledge is the ability to understand and effectively use various financial skills which includes personal financial management, budgeting, and investing. The key aspects of financial knowledge include knowing how to create a budget, plan for retirement, manage debt, and track personal spending. It is important to chart out a plan and have enough savings to provide required income post-retirement and avoid high levels of borrowing that may result in defaults and bankruptcy. In general, education has a value and similarly improvement in financial literacy also has a value in itself, thereby financial education is usually seen as a tool to reach further objectives. These objectives vary depending on the perspectives but in every case, financial literacy can be enhanced with financial education, contribute to better financial decisions, and thereby improve welfare Lusardi and Mitchell (2014).

Financial inclusion implies the efforts to make financial products and services accessible and affordable to all individuals and businesses, irrespective of their company size or personal net worth. The World Bank being the major promoter of financial inclusion states that financial inclusion facilitates day-to-day living, and helps families and businesses plan for everything from long-term goals to unexpected emergencies. As account holders, people are prone to use financial services like credit, savings and insurance, start and expand businesses, invest in education or health, manage risk, wherein all of these can result in enhancing their overall quality of lives. Several barriers such as culture, financial literacy, gender, income and assets, proof of identity, remoteness of residence affect peoples' access to the formal banking system to a large extent. Over a period of time, various measures are being taken by banks in India to improve access to affordable financial services through financial education, leveraging technology, and generating awareness.

Financial inclusion and financial knowledge are twin pillars. The financial products and services that people demand is provided by financial inclusion that acts from the supply side while people are made known of what they can demand by stimulating the demand side through financial knowledge Subbarao (2010). Developing economies like India face the problem of low level of literacy, poor accessibility and low demand. The health of the Nation's financial system depends upon the ability of its people to effectively manage their own finances.

Review of Literature

Hussain et al. (2018) observed the association between education level and business owners' commitment with financial services. They acknowledged that financial literacy importantly influenced a firm's access to finance and a firm's progress. Kou et al. (2021) acknowledged access to finance as a challenge; thereby, financial literacy is treated as one of the prominent financial inclusion constituents by diverse National and International organizations. Shubhra Biswas and Arindam Gupta (2013) verified that the financial literacy level of urban or rural areas were influenced by the financial inclusion and the demographic factors of the respective region. They found that Occupation, Educational Background and Household Income were statistically significant demographic factors influencing financial literacy. A statistically significant relationship with financial literacy was found through the Financial Inclusion Index. Lusardi and Mitchell (2011) measured financial knowledge across eight countries, i.e., Germany, New Zealand, United States, Japan, Sweden, Russia, Netherlands and Italy, and concluded that financial literacy is low regardless of the level of financial market development and the type of pension that is provided. They further found that women and a relatively older population had possessed less knowledge of financial matters.

Bhushan (2014) concluded that most Indians invest their money in traditional financial products instead of new age financial products with higher returns and have a very low level

of financial literacy. Bihari (2011) found that the reasons for a major failure of financial inclusion in India in the past were absence of technology, absence of reach and coverage, inefficient delivery mechanism, absence of business model, and lack of compassion for poor among rich. But now there is an increase in focus on inclusive growth. Bongomin et al. (2016) in their study on financial literacy's impact on financial inclusion emphasizing social capital, found that financial literacy affected financial inclusion through complete mediation of social capital. Shen et al. (2019) revealed a statistically meaningful relationship between digital financial product usage and financial literacy, except internet usage.

Lyons and Kass-Hanna (2019) established that the financial systems were less likely to include the cautiously susceptible populations. It was found that higher levels of financially literate people are more probable to be involved in positive savings behavior and less likely to borrow from different informal sources. Seshan and Yang (2012) noticed large positive effects on migrant savings and their remittance to their family by providing a savings-oriented financial literacy workshop to the migrant Indian workers in Qatar. Mahdzan and Tabiani (2013) had carried out an exploratory study in Malaysia which revealed that savings regularity, gender, income and educational level positively influenced the probability of savings.

Need for the Study

In India, Financial Literacy has been a major area of concern in recent years. The status of financial inclusion in India is low which means people are not aware about financial services and products Abheek Barua (2016). Many of the earlier studies in the Indian context Mandira Sarma (2008) focused on the supply side of financial inclusion considering factors like branch penetration, ATM penetration, number of employees in branch offices, loan-income ratio, cash-deposit ratio, and number of accounts per adult. There was less focus on the demand side of financial inclusion by considering indicators like awareness, accessibility, and usage of banking services. There is absence of financial awareness and knowledge among college students which is shown in many of the research studies around the world Nga et al. (2010). The level of financial knowledge is a strong indicator of how financially successful an individual will be in the future. Financial literacy is essential for college students because they face various economic challenges and are at an age where adopting basic financial skills and knowledge can profoundly impact their entire adulthood. Adequate financial knowledge helps in establishment of good financial habits such as savings, wise investments, budgeting and debt management which will benefit the students for a better livelihood. Keeping in view the above, the present study is an attempt to find out the level of financial knowledge among students of higher educational institutions in Chennai and the model fit of Financial Knowledge leading to Financial Inclusion which is measured by awareness, usage and accessibility.

Conceptual Framework

This model is based on the conceptual model of Al-Sarraf et al. (2018) which considered the impact of Financial Literacy on Financial Inclusion and Nandru et al. (2016) that considered four dimensions of financial inclusion namely awareness, affordability, accessibility and usage of banking services. Based on this a new model has been developed with the essential aim to analyze the effect of Financial Knowledge on Financial Inclusion. Financial Inclusion being the dependent variable is measured using three factors namely Awareness, Usage and Accessibility whereas Financial Knowledge is the independent variable. Thus, this research intends to study the relationship between Financial Knowledge and the factors of Financial Inclusion. The conceptual model for the present study is given below.

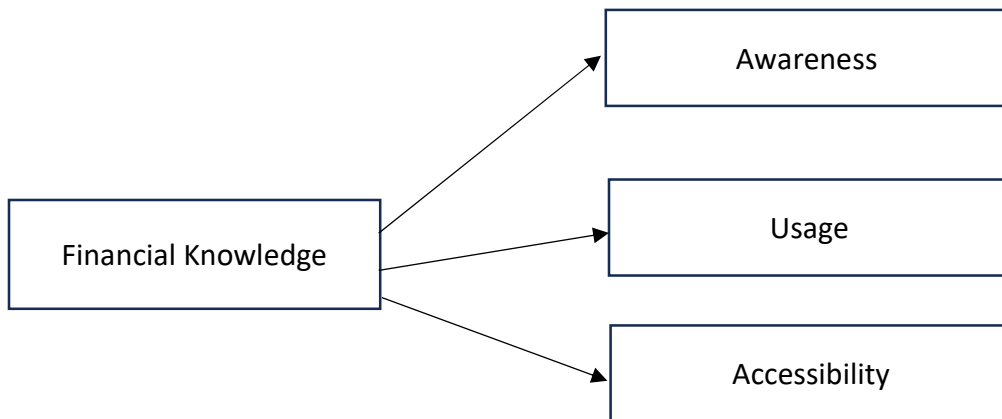


Figure 1: Financial Knowledge and Financial Inclusion Model

Objectives of the Study

1. To assess the general Financial Knowledge of college students and measure Financial Inclusion.
2. To determine the group differences amongst the respondents with respect to Financial Knowledge based on gender and stream of study.
3. To determine the relationship between Financial Knowledge and Financial Inclusion.
4. To test the goodness of fit of the Financial Knowledge and Financial Inclusion Model.

Hypotheses of the Study

The Hypotheses framed and tested is that:

Null Hypothesis 1: There exists no significant difference amongst the respondents with respect to Financial Knowledge based on Gender.

Null Hypothesis 2: There exists no significant difference amongst the respondents with respect to Financial Knowledge based on Stream of study.

Hypothesis 3: There is a significant relationship between Financial Knowledge and Awareness.

Hypothesis 4: There is a significant relationship between Financial Knowledge and Usage.

Hypothesis 5: There is a significant relationship between Financial Knowledge and Accessibility.

Hypothesis 6: Financial Knowledge has a significant influence on Awareness.

Hypothesis 7: Financial Knowledge has a significant influence on Usage.

Hypothesis 8: Financial Knowledge has a significant influence on Accessibility.

Research Methodology

The study is empirical and analytical in nature. Primary data was collected using a standardized structured questionnaire from a sample of 356 college students in Chennai using Purposive Sampling Technique. The questionnaires were administered using Google Forms. The factors of the study were measured on a Five Point Likert Scale ranging from “Strongly Agree” (5) to “Strongly Disagree” (1). Weighted Mean, t-test, Karl Pearson’s Correlation and SEM were used for the purpose of analysis using SPSS Version 21 software.

Demographic Profile

The demographic profile of the respondents is depicted in Table 1:

Table 1
Demographic Profile

S. No.	Age (In Years)	No.	Percentage (%)	Gender	No.	Percentage (%)
1.	18 – 20	17	48.87	Male	14	41.85
2.	21 – 23	18	51.13	Female	20	58.15
S. No.	Education Level	No.	Percentage (%)	Stream	No.	Percentage (%)
1.	Pursuing Under Graduation	16	45.22	Aided	11	33.42
2.	Pursuing Post Graduation	19	54.78	Self-Supporting	23	66.58
S. No.	Stream of Study	No.	Percentage (%)	Having Bank Account	No.	Percentage (%)
1.	Business Studies Stream	19	54.49	Yes	35	100
2.	Others	16	45.51	No	Nil	Nil
S. No.	Type of account used	No.	Percentage (%)	Sources of funds	No.	Percentage (%)
1.	Savings Account	33	94.94	Pocket money	39	86.79
2.	Fixed Deposit	10	2.81	Part time jobs	27	7.59
3.	Recurring Deposit	8	2.25	Others	20	5.62

Source: Primary data

It can be seen from the above Table 1, majority (51.13%) of the respondents belong to the Age group 21-23 years, followed by 48.87% of them belonging to the age group of 18-20 years. Majority (58.15%) of the respondents were female, while 41.85% of them were male. 54.78% students are pursuing their Post graduation and 45.22% are pursuing their Under Graduation. Majority of respondents (66.58%) belong to the Self-Supporting stream and 33.42% of them were from the Aided stream. 54.49% of the respondents are from the Business Studies stream and 45.51% of them from other streams of study. All (100%) of the respondents have a bank account. Majority (94.94%) of them use savings account, 2.81% use fixed deposit and only 2.25% use recurring deposit. 86.79% of the respondents have pocket money as their major source of funds followed by 7.59% of them having part time jobs and 5.62% of them having other sources of funds like scholarships, you-tube and stock market returns.

Data Analysis and Interpretation

The first part of the analysis deals with examining Financial Knowledge and the Factors of Financial Inclusion using Weighted Mean.

Table 2
Financial Knowledge and Factors of Financial Inclusion

S. No.	Factors	Weighted Mean
1.	Financial Knowledge	3.96
2.	Financial Inclusion – Factors	
	Awareness	3.94
	Usage	3.60
	Accessibility	3.78

Source: Primary Data

From the above Table 2, it can be inferred that, Financial Knowledge (3.96) has a weighted mean score of above 3 indicating that the respondents have moderately agreed to all the statements measuring Financial Knowledge. This may be because the respondents seem to have knowledge of the various concepts of personal finance such as savings and investments thereby helping them to make investments that gives benefits. The respondents are pursuing their collegiate education whereby different financial concepts are being taught to them as a part of their curriculum. Thus, they seem to have obtained their knowledge on the concepts relating to finance and are aware of how to accurately manage the funds to meet their expenses.

Further, it can also be seen from the above table 2 that the factors measuring Financial Inclusion namely Awareness (3.94), Usage (3.60) and Accessibility (3.78) have weighted mean scores of above 3 indicating that the respondents have moderately agreed to all the statements measuring the aforesaid factors. The respondents are aware of the various financial services available in the market whereby they use the bank accounts to save money and ATMs to deposit and withdraw money. Thus, they find the financial services easily accessible to them.

The next part of the analysis deals with determining the group differences amongst the respondents with respect to Financial Knowledge based on chosen demographic variables using t-test.

Financial Knowledge based on Gender

The Null Hypothesis framed and tested is that:

Null Hypothesis 1: There exists no significant difference amongst the respondents with respect to Financial Knowledge based on Gender.

Table 3
Financial Knowledge based on Gender

Factors	t	Sig
Financial Knowledge	1.17	0.24 (NS)

Source: Primary Data

From the above Table 3, it can be inferred that, $p > 0.05$ for Financial Knowledge at 5% level of significance, the Null Hypothesis 1 is accepted indicating that there exists no significant difference with respect to Financial Knowledge based on gender. This may be because male and female respondents who pursue their collegiate education have the same level of financial knowledge and learn similar content thereby having equal exposure to the financial concepts.

Financial Knowledge based on Stream of Study

The Null Hypothesis framed and tested is that:

Null Hypothesis 2: There exists no significant difference amongst the respondents with respect to Financial Knowledge based on Stream of study.

Table 4
Financial Knowledge based on Stream of Study

Factors	t	Sig
Financial Knowledge	0.66	0.50(NS)

Source: Primary Data

From the above Table 4, it can be inferred that, $p > 0.05$ for Financial Knowledge at 5% level of significance, the Null Hypothesis 2 is accepted indicating that there exists no significant difference amongst the respondents with respect to Financial Knowledge based on stream of study. This may be because the respondents belonging to the Business Studies stream have knowledge on financial aspects as it is included in their curriculum. Additionally, respondents from the Non-Business Studies stream also attend extra disciplinary courses in the Business Studies stream through which they are able to gain an understanding of the financial concepts. Respondents also have general knowledge on finance with their usage of social media and other online platforms which provides an insight into the financial concepts.

The next part of the analysis deals with determining the relationship between Financial Knowledge and factors of Financial Inclusion using Karl Pearson’s Correlation.

Relationship between Financial Knowledge and Factors of Financial Inclusion

The Hypotheses framed and tested is that:

Hypothesis 3: There is a significant relationship between Financial Knowledge and Awareness.

Hypothesis 4: There is a significant relationship between Financial Knowledge and Usage.

Hypothesis 5: There is a significant relationship between Financial Knowledge and Accessibility.

Table 5

Relationship between Financial Knowledge and Factors of Financial Inclusion

Factors	“r value”
Financial Knowledge and Awareness	0.68**
Financial Knowledge and Usage	0.36**

Financial Knowledge and Accessibility	0.61**
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Source: Primary Data

Note: ** denotes significant at 1% level

The above table 5 shows that $p < 0.01$ for all the factors of Financial Inclusion namely Awareness (0.68), Usage (0.36) and Accessibility (0.61) at 1% level of significance. Thus, the hypotheses 3, 4 and 5 are accepted indicating that Financial Knowledge is significantly and positively correlated to the factors of Financial Inclusion. This may be because the respondents' knowledge on savings, investments, insurance and money management seems to have made them aware of the various financial services such as banking, mutual funds, insurance, tax, stock market and other investments. They are aware that saving and investing in small amounts in shares yield additional income. Good financial education of the respondents helps them access financial services with ease.

Amongst the factors of Financial Inclusion, Awareness was found to be highly correlated (0.68).

The next part of the analysis deals with testing and validating the relationship amongst the constructs of the study using Structural Equation Model (SEM).

Structural Equation Model

According to Spulbar et al. (2021), Structural Equation Modeling or simply the acronym SEM represents a multivariate statistical analysis technique which is applied in the analysis of structural relationships, while it also represents a compound of Factor Analysis and Multiple Regression Analysis. The two sub models of SEM are Measurement Model and Path or Structural Model. Using Confirmatory Factor Analysis (CFA), the relationship between the observed and latent variables is assessed by the Measurement Model. The interrelationships amongst the variables which are represented by hypotheses are examined by the Path or the Structural Model.

Measurement Model – Confirmatory Factor Analysis

Financial Knowledge and Financial Inclusion measurement models were assessed through Confirmatory Factor Analysis. It is used in this study to test and measure whether Financial Knowledge and factors of Financial Inclusion namely Awareness, Usage and Accessibility are related which is confirmed based on the Fit Indices, Composite or Construct Reliability, Average Variance Extracted and Discriminant Validity. The Model Fit Indices namely: Chi-Square Statistic, Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index

(AGFI), Comparative Fit Index (CFI), Root Mean Square Residual (RMR) and Root Mean Square Error of Approximation (RMSEA) must be within the threshold values as suggested by (Cheng, Shih-I (2011); Hair et al. (2006); Daire et al. (2008)). Similarly, the Composite or Construct Reliability (CR) and Average Variance Extracted (AVE) is achieved when the former is more than the acceptable level of 0.60 and the latter is less than 0.50 (Lam L W (2012). Further, the Discriminant Validity (DV) is attained when the inter-correlation values amongst the factors is not more than 0.85 Muhamad Safiih, L. and Azreen, N. (2016). The results of the same are discussed simultaneously.

CFA Results for Financial Knowledge and Financial Inclusion

In order to measure Financial Inclusion, three factors were used namely Awareness, Usage and Accessibility. Thus, to confirm on Financial Knowledge and its influence on the three factors of Financial Inclusion, the Model Fit Indices, Average Variance Extracted (AVE), Construct Reliability (CR) and Discriminant Validity (DV) were calculated.

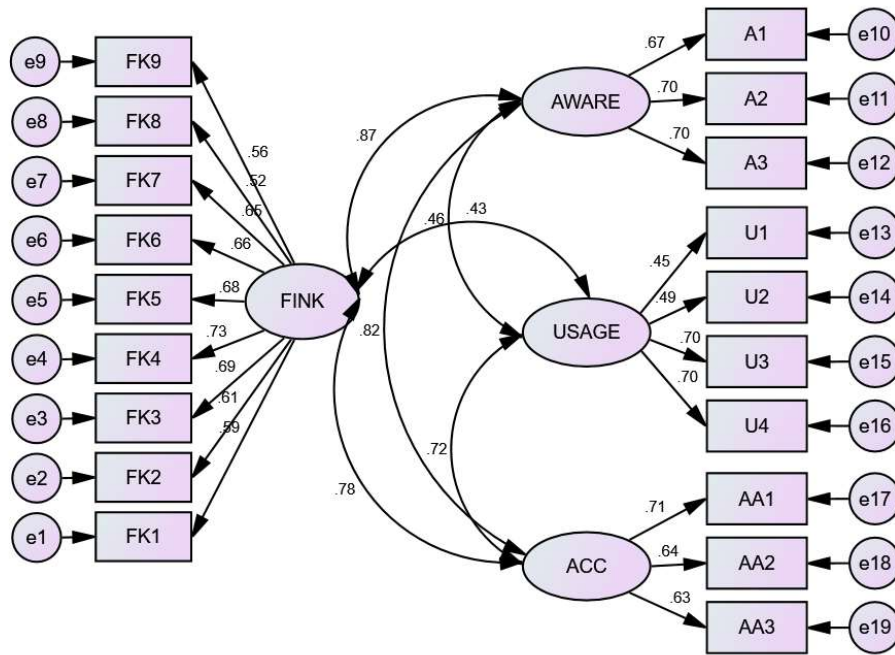


Figure 2: Confirmatory Factor Analysis on Financial Knowledge and factors measuring Financial Inclusion

**Table 6
Model fit Indices**

Indices	Value	Suggested value
Chi-square value/DF	2.79	< 5.00 (Hair et al. (1998))
GFI	0.88	< 0.90 (Cheng, Shih-I (2011))
AGFI	0.85	< 0.90 (Cheng, Shih-I (2011))
CFI	0.90	> 0.90 (Daire et al. (2008))
RMR	0.05	< 0.08 (Hair et al. (2006))
RMSEA	0.07	< 0.08 (Hair et al. (2006))

From the above table 6, it shows that the values of the Confirmatory Factor Analysis are all within the threshold limits thereby indicating that the model is fit.

Reliability and Validity

The validity and the reliability tests were conducted and showed satisfactory results. The overall reliability of the questionnaire tested using Cronbach’s Alpha Reliability Test was found to be 0.89. The CR value of Financial knowledge is 0.85 and that of Factors of Financial inclusion that is Awareness is 0.73, Usage is 0.68, Accessibility is 0.69 whereas the AVE value of Financial knowledge is 0.40 and that of Factors of Financial inclusion that is Awareness is 0.47, Usage is 0.35, Accessibility is 0.43. The DV value of Financial knowledge is 0.62 and that of Factors of Financial inclusion that is Awareness is 0.68, Usage is 0.50, Accessibility is 0.65 The CR, AVE and DV values of all the factors are within the acceptable range.

Structural Model

Structural Equation Model (SEM) is used in the study to assess and investigate how Financial Knowledge and factors of Financial Inclusion namely Awareness, Usage and Accessibility are related. The theoretical model is proposed and investigated with the SPSS AMOS statistical package.

The variables used in the structural equation model are

- I. Observed, endogenous variables**
 - 1. Awareness
 - 2. Usage
 - 3. Accessibility
- II. Observed, exogenous variables**
 - 1. Financial Knowledge
- III. Unobserved, exogenous variables**
 - 1. e20: Error term for Awareness
 - 2. e21: Error term for Usage
 - 3. e22: Error term for Accessibility

Hence number of variables in the SEM are

Number of variables in this model	7
Number of observed variables	4
Number of unobserved variables	3
Number of exogenous variables	4
Number of endogenous variables	3

The Hypotheses framed and tested is that:

Hypothesis 6: Financial Knowledge has a significant influence on Awareness.

Hypothesis 7: Financial Knowledge has a significant influence on Usage.

Hypothesis 8: Financial Knowledge has a significant influence on Accessibility.

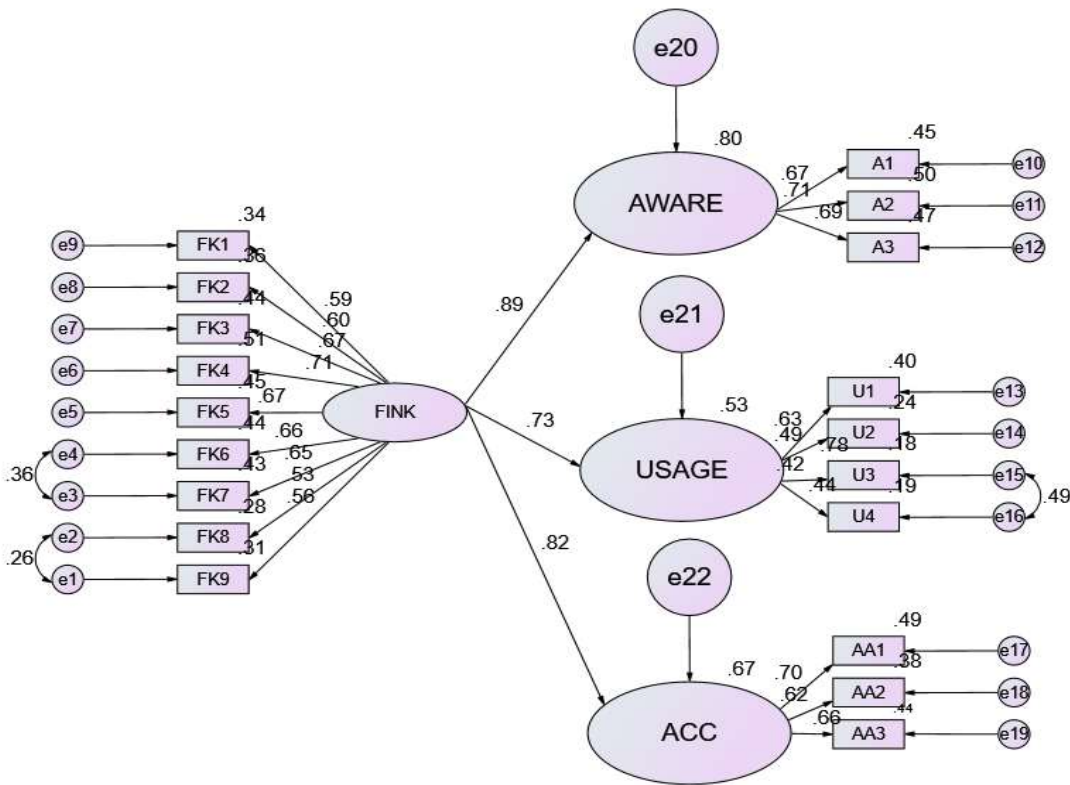


Figure 3: Structural Equation Model on Financial Knowledge and factors measuring Financial Inclusion

Table 7
Model fit Indices

Indices	Value	Suggested value
Chi-square value/DF	2.38	< 5.00 (Hair et al. (1998))
GFI	0.90	> 0.90 (Hair et al. (2006))
AGFI	0.87	< 0.90 (Cheng, Shih-I (2011))
CFI	0.91	> 0.90 (Daire et al. (2008))
RMR	0.04	< 0.08 (Hair et al. (2006))
RMSEA	0.06	< 0.08 (Hair et al. (2006))

From the above table 7, it is found that the calculated Chi square value is 2.38 which is greater than 0.05 which indicates good fit. All the indices fall within the given suggested values indicating that the “Financial Knowledge and Financial Inclusion” model is fit. Here, GFI (Goodness of Fit Index) value is 0.90, AGFI (Adjusted Goodness of Fit Index) value is 0.87, CFI (Comparative Fit Index) value is 0.91, RMR (Root Mean Square Residuals) value is 0.04 and RMSEA (Root Mean Square Error of Approximation) value is 0.06.

Table 8
Variables in the Structural Equation Model Analysis

Variables		Unstandardised coefficient	S.E	Standardised coefficient	t value	P value
Awareness	< - - -	1.08	0.121	0.89	8.94	<0.001**
Usage	< - - -	0.81	0.109	0.73	7.50	<0.001**
Accessibility	< - - -	1.05	0.121	0.82	8.73	<0.001**

Note: ** denotes significant at 1% level

The above Table 8 presents the results of the structural equation path estimates.

Hypothesis 6: Financial Knowledge has a significant influence on Awareness.

It can be seen that, $p < 0.001$ for Financial Knowledge at 1 % level of significance. Thus, the hypothesis 6 is accepted indicating that Financial Knowledge significantly influences Awareness. This may be because the respondents knowledge of personal finance concepts, preparation of budgets and management of funds has been an aid to them in being familiar and understanding the various banking and financial services available in the financial market. Further, the coefficient of Financial Knowledge is 1.08 representing a partial effect of Financial Knowledge on Awareness, holding other variables constant. As the estimated value is positive, the Awareness would increase by 1.08 for every one unit increase in Financial Knowledge.

Hypothesis 7: Financial Knowledge has a significant influence on Usage.

With regard to Usage, the hypothesis 7 is accepted since $p < 0.001$ at 1% level of significance denoting that Financial knowledge significantly influences Usage. The financial knowledge of the respondents helps them in using the financial services whereby, they invest in stock market transactions to yield additional income and also use loan and insurance products like students' loan, vehicle insurance. Thus, the coefficient of Financial Knowledge is 0.81 representing a partial effect of Financial Knowledge on Usage, holding other variables constant. As the estimated value is positive, the Usage would increase by 0.81 for every one unit increase in Financial Knowledge.

Hypothesis 8: Financial Knowledge has a significant influence on Accessibility.

Finally, with respect to Accessibility, the hypothesis 8 is accepted since $p < 0.001$ at 1% level of significance indicating that Financial knowledge significantly influences Accessibility. The knowledge of respondents on various financial aspects has made it easier to access the banking services for them. Thus, they are able to approach the various branches of the banks with ease and access the ATMs which are located at convenient places. Thereby, the coefficient of Financial Knowledge is 1.05 representing a partial effect of Financial Knowledge on Accessibility, holding other variables constant. As the estimated value is positive, the Usage would increase by 1.05 for every one unit increase in Financial Knowledge.

Limitations of the Study

- The sample comprised of Graduate and Post-graduate college students in Chennai.
- The study considered the respondents belonging to the age category of 18 to 23 years only.
- Limitations of the questionnaire are applicable to the study.

Scope for Further Research

- Further research could be undertaken for different countries and regions.

- Also, research can be conducted covering all age groups.
- The advancements in the Financial Technology and its influence on the demand side factors of Financial Inclusion like Awareness and usage could also be considered for research.
- Comparative studies with respect to Financial Inclusion across people in different sectors and regions can be conducted for future research.

Conclusion

Financial Knowledge leads to financial literacy which plays an important role in the promotion of Financial Inclusion. This could be achieved by creating awareness on financial education which will help one to effectively manage their finances. A strong understanding of the financial concepts facilitates the development of wise financial behavior. This study shows that Financial Knowledge has a significant positive relationship with Financial Inclusion. This means that, greater the knowledge on financial aspects such as savings, investments, insurance and money management, wider the understanding on banking and financial services which will further help individuals to avail and manage the financial services available in the financial market effectively. Financial Knowledge is crucial for college students as they are in their formative stage where acquiring basic financial skills can significantly influence their financial decisions and help overcome their economic hurdles. Social media and other online platforms have also exposed students to financial ideas and concepts to some extent. It is important that students enhance their Financial Knowledge which when done at a younger age will help them learn how to save, invest, make budgets and manage money wisely to make smarter decisions and act more responsibly with their personal finances. This would ensure them a better future.

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