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FINANCIAL LITERACY, FINANCIAL INCLUSION AND BEHAVIOURAL BIASES: A COMPARATIVE STUDY AMONG UNDERGRADUATE STUDENTS

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Abstract

Over the years, technology has rapidly changed the system as well manpower in every sector, demanding regular upskilling to be in par with the changes and to survive in the competitive world. In this regard, Government of India took major measures and initiatives to encourage the people to accept new skills and work with technology, one such significant campaign was Digital India – focusing on purposeful transformation to an empowered society. Various programmes and skill development training were conducted under this measure to make our nation digitally sound, young youths and students generally become the first target audience for such initiatives. Furthermore, this study on financial literacy, financial inclusion and behavioural biases was conducted on undergraduate students from rural and urban regions to examine the influences and accessibility of financial products and services for which a total of 176 respondents were considered, and statistical tests were applied using Jamovi software. The findings highlighted that there is a significant difference among rural and urban students' financial literacy, and it effects the informed decision making. Among all biases, overconfidence and financial literacy rate exhibit highest influence among students in financial inclusion.
Keywords: Behavioural biases, Financial inclusion, Financial literacy, Rural development, Students curriculum.

Introduction

The present 21st century is revolving around sphere of changes in every walk of life; the entire world is facing new challenges that is turning normal and becomes a part of routine in everyday life. Since the introduction of mobile phones, life has become much easier and hustle free. With the growing developments around the world, it is a necessity for every individual to be in par with the technology to sustain in the competitive world specially with Artificial Intelligence and Machine Learning overtaking manpower. in this regard, the government has taken various initiatives to expand and diversify the financial sector for a better service. According to Government of India Press information Bureau, the financial inclusion index has risen to 67.0 as of March 2025 as compared to 64.2 in March 2024 – this indicates a wider usage of financial services across the nation.

Financial Literacy

Every individual seeks to manage finances effectively ensuring more savings and less expenditures, in the past finance was only about money management, but now it is more of investments, shares and portfolio diversification that calls for effective decision making throughout the process and this has paved the way for professionals like financial advisors and consultants. Beyond knowledge on financial services, literacy also includes understanding of interest rates, knowing the difference between savings and investment, identifying the best portfolio etc., RBI established National Centre for Financial Education in 2013 to promote financial education among rural and urban youths. According to the reports of National Centre for Financial Education, 27% of Indian adults meet basic financial literacy requirements that is significantly below the global average of 42%. This statistic calls for a wider look into the literacy rates.

Financial Inclusion

Though financial inclusion has traces from last 30 years, its importance came to light only from 2014 with the introduction of Pradan Mantri Jan Dhan Yojana aiming to provide access to digital services like banking, credit, insurance etc., to all citizens, majorly focusing on the rural areas, ensuring a way of measuring the sustainable development of the nation. RBI and SEBI have taken initiatives in promoting awareness on financial inclusion through conduct of workshops, seminars and training programs yet the development seems to be poor due to socio economic restrictions, lack of technology update, security concerns etc., further, it holds significant importance among the 17 Sustainable Development Goals specially SDG 8 and 9 focusing on economic growth and building innovation and infrastructure. Financial inclusion is growing rapidly in urban areas, but the rural and remote villages lack with basic facility and have a fear of insecurity. Hence, the focus demands on rural development for a sustainable growth.

Behavioural Biases

The concept of behavioural biases traces back to traditional economics and behavioural economics; traditional economics highlights that an individual decision depends only on the information gained and has no relation with emotions and sentiments and decisions purely depend on the self-interest. In contrary, behavioural economics considers the human emotions and psychology, along with information in making every rational decision, this concept has gained wider significance that extended to a new area called behavioural biases: the decisions that are often being influenced by cognitive factors and emotions in making judgments than objective analysis. Major biases that influence financing decisions include herd behaviour, heuristic, loss aversion, over confidence and anchoring biases.

Linkage between Financial Literacy, Financial Inclusion and Behavioural biases

An individual's knowledge on financial products and services would lead him in making wise decisions by choosing the digital services and payments effectively. But the decision is not made by considering the digital products alone, beyond the availability of the products and services, the behavioural biases also influence largely for an effective decision process. Therefore, all three concepts are inter linked with each other.

Theoretical Framework

Behavioural Economics Theory

Also known as Prospects Theory was given by Kahneman and Tversky in the year 1979, the theory highlighted that the individuals make rational decisions considering the loss and gains attached to the investment and not merely on the information, challenging the earlier utility theory that emphasized on rational decisions which are purely based on the information. Further, the theory states that few biases such as loss aversion, risk, overconfidence are the most common biases influencing rational decision-making in individuals.

Review of Literature

Suresh G (2021) in his paper titled "Impact of Financial Literacy and Behavioural Biases on Investment Decision-making" assessed the various types of behavioural biases that significantly affects the investment decisions of individuals. Further, to analyse the study a structured questionnaire was collected from 250 respondents from southern states of India and has measured the study by building a Structural Equation Modelling. The findings of the study state that heuristic bias can give positive speculation results, cognitive illusions hold a negative impact on investors herd mentality. The author concludes that proper training to investors can lead to better understanding of trade market and help in making rational decisions.

Varsha Sahu and Samir Gopalan (2025) in the paper titled "A Comparative Study on Financial Literacy Levels Among Urban and Rural Populations in Raigarh, Chhattisgarh, India" evaluated the financial literacy levels in impacting investment behaviours among rural and urban populations and identified the factors influencing financial literacy. The data was collected from 70 respondents through a structured questionnaire and statistical test such as chi square and regression were applied. Further, the findings stated that urban respondents showed greater knowledge of budgeting whereas rural respondents had good knowledge of loans. The paper concludes on a note to prioritize key factors such as education and income stability to enhance financial literacy in rural areas.

Sun Weixiang , et al., (2024) in the paper titled "An empirical assessment of financial literacy and behavioural biases on investment decision: Fresh evidence from small investor perception" analysed the behavioural biases and financial literacy on stock market investments. The study was conducted on 450 respondents from northern state of India who were in trading for atleast last 2 years through a questionnaire. Further, the study involved SEM model to analyse the association between financial literacy and behavioral biases in investment decisions, also the behavioural biases such as anchoring, representativeness and over confidence leads to poor investment decisions. The author concluded that, people investing money in stock market have irrational mindset that calls for much awareness and training.

Nancy Gupta, Rana et al., (2025) in their paper titled "Financial Literacy as a Moderator in Behavioral Biases and Investor Decisions" examined and analysed the impact of behavioural biases and the role of financial literacy in investment decisions. The author adopted two sets of theory namely prospect and regret and analysed all the variables of behavioural biases by collecting a sample of 326 respondents' opinion on stock market investments in Delhi and Noida. The study revealed that higher rate of financial literacy made investors overcome behavioural biases and enhanced the investment decisions.

Madhavi, Rashmi et al., (2023) in their paper titled "Impact of Financial Literacy on Behavioural Biases and Investment Decision" studied the impact of behavioural biases variables on investment decisions, also examined the modernised effect of financial literacy among gender variable by collecting data from 200 individual investors and applied hierarchical regression analysis. The result of the study indicates that the financial literacy level among professionals is satisfactory, majority ranked growth as the most important factor than income and balanced preference for income and growth as the least factor.

Alqam and Hamshari (2024) in the paper titled "The impact of financial literacy on financial inclusion for financial well-being of youth: evidence from Jordan" assessed the awareness level of youths on financial literacy and inclusion and its impact on the well being of youths between the age of 18 and 30 years. The study was conducted on 440 respondents across Jordon region. Further, the study involved construction of SEM model and the findings reveal that there is a positive relationship between financial literacy and inclusion impacting consumer rights and protections. The paper suggests that practitioners should emphasis youths on financial inclusion, rights and responsibilities in order to improve the well being of individual.

Anjali Sane (2019) in her paper titled "Financial Literacy among college students - A Study" has highlighted the initiatives taken by Ministry of HRD in promoting financial literacy and inclusion among youths, the author has stated that many studies have been in rural areas focusing on women respondents than college going students. To study the financial knowledge among students, a sample from 10 institutions involving 550 students from Pune city were collected and analysed for the study. The findings prove that only 53% of banks had Financial Literacy Centre, but none was present at Pune city, all bank managers opined to include financial literacy as a part of curriculum for students. The author suggested that there is a need for continuous update of financial literacy among all age groups, the stakeholder of the institution holds highest responsibility in promoting financial literacy and inclusion.

Rekha Albert (2023) in her paper titled "Investigating Students' Behavioural Biases in Regard to Financial Decision-Making" examined the behavioural biases of university students towards financial literacy, confidence of women and the factors impacting the biases. The study was conducted on Cluj-Napoka university students, the analysed data revealed that mental accounting has the highest influence for cognitive errors, men tend to follow the crowd more than women proving more of herding behaviour. The paper suggests that students should consider the behavioural factors in the process of decision making to be rational.

Isik Akin (2022) in his paper titled "The Most Common Behavioural Biases among Young Adults in Bristol, UK and Istanbul" examined the behavioural biases of adults in Istanbul that lead to irrational financial behaviour. The data was collected from 415 respondents consisting of 15 behavioural biases statements, among them framing bias was rated the highest and self-attribution bias as least. Further, findings stated that most of the individuals prefer to invest in companies they work for as they behave over optimistically and exhibit anchoring bias. Illusion of knowledge and dissonance are the main behavioural biases among the youths of Istanbul.

Shanmugasundaram, et al., (2024) in their paper titled "The impact of behavioral biases on investment decisions: a serial mediation analysis" investigated the behavorial biases on investment decisions on 501 life insurance policy holders through the mediation of overconfidence and disposition effects. The study was analysed using SEM model and revealed that the relationship between behavioural biases and over confidence was positively related and the disposition effect had considerable effect on investment decisions, also the policyholders consider emotions and family sentiments before making investment decisions.

The paper concludes that IRDAI, should consider these biases in order to frame policies to protect the interest of policyholders.

Objectives of the Study

1. To understand the level of awareness among students in financial literacy and financial inclusion
2. To analyse the behavioural biases, influence in financial decision making among students
3. To study the impact of financial literacy and behavioural biases on financial inclusion.

Statement of the Problem

Rural development of the nation has been the top priority since few years, concentrating on infrastructure development, MSMEs growth, skill development etc., and the framework of Sustainable Development Goals 2030 considering to develop and address the challenges of rural community. Further, Government has taken many initiatives and introduced schemes such as Pradan Mantri Gramin Digital Saksharta Abhiyan, BharatNet, Digital Bharat Nidhi etc., to provide access to digital services and help in bridging the gap between rural and urban regions.

The present study aims to analyse the level of access and usage of digital products, services and the influence of behavioural biases among young youths from two different regions – rural and urban.

Research Design

The study involved primary source of data collection through a structured questionnaire consisting of questions on financial literacy, financial inclusion and behavioural statements. The questions were circulated to 176 respondents studying B. Com, out of which 99 respondents were from an institution at Bangalore city and 77 respondents were from an institution at Haveri city representing urban and rural demographic regions. Further, the study was analysed using statistical tools in Jamovi software.

Hypothesis

H1: There are significant differences in financial literacy and financial inclusion awareness among the students of rural and urban region.

H2: There is a significant behavioural bias among students that influence their financial decision making.

H3: There is a significant impact of financial literacy and behavioural biases on financial inclusion

Findings

Independent Samples T-Test

H1: There are significant differences in financial literacy and financial inclusion awareness among the students of rural and urban region

To test the above hypothesis, Mann – Whitney U test and Chi Square test was conducted

Descriptives					
	College	N	Mean	Median	SD
FL	Rural	77	3.554	3.500	0.558
	Urban	99	4.145	4.000	0.555

Independent Samples T-Test			
		Statistic	p
FL	Mann-Whitney U	1739.500	<.001

Source: Primary data

Interpretation

From the above table, it is interpreted that since p value is less than the alpha value of 0.005 null hypothesis is rejected stating that there is significant difference between urban and rural students' awareness on Financial Literacy. Further, the urban students have more awareness as compared to the rural students since the mean score is high.

χ^2 Tests			
	Value	**df**	**p**
χ^2	71.578	17	<.001
N	176		

Source: Primary data

Interpretation

From the above table, it is interpreted that since p value is less than the alpha value of 0.005 null hypothesis is rejected stating that there is significant difference between urban and rural students' awareness on Financial Inclusion.

H2: There is a significant behavioural bias among students that influence their financial decision making

To test the above hypotheses independent samples t test and mean score of each bias was calculated.

Independent Samples T-Test		
	p	**Significance**
Overconfidence mean	<.001	Significant
Present mean	0.040	Significant
Loss aversion mean	0.003	Significant
Herding mean	0.122	Not significant
Anchoring mean	0.023	Significant
Mental accounting mean	0.029	Significant

Source: Primary data

Interpretation

The Mann Whitney U test was conducted to know the significance of each behavioural biases among students in financial decision making. From the above table it is evident that except for herding bias all other biases like overconfidence, present, loss aversion, anchoring and mental accounting possess significant differences among rural and urban students.

Descriptives					
	Area	N	Mean	Median	SD
Overconfidence mean	Rural	77	3.342	3.333	0.587
	Urban	99	3.751	4.000	0.597
Present mean	Rural	77	3.251	3.333	0.619
	Urban	99	3.431	3.667	0.814
Lossaversion mean	Rural	77	3.537	3.667	0.636
	Urban	99	3.825	4.000	0.632
Herding mean	Rural	77	3.048	3.000	0.764
	Urban	99	3.219	3.333	0.811
Anchoring mean	Rural	77	3.433	3.333	0.570
	Urban	99	3.680	3.667	0.722
Mental accounting mean	Rural	77	3.160	3.333	0.630
	Urban	99	3.404	3.333	0.920

Source: Primary data

Interpretation

From the above table consisting of six mean score of biases, the highest score is loss aversion bias with 3.825, followed by over confidence and anchoring. Further, observation highlights that students from urban region depicts highest mean score in all biases as compared to rural students inferring that rural students exhibit more emotions towards losses and are highly sensitive to risks.

H3: There is a significant impact of financial literacy and behavioural biases on financial inclusion

To test the above hypothesis Multiple Regression Model was developed to know the impact of strong biases on financial inclusion decisions.

Model Fit Measures			
Model	**R**	**R^2**	**Adjusted R^2**
1	0.645	0.416	0.391
Note. Models estimated using sample size of N=176			

Source: Primary data

Interpretation

The above R value of 0.645 shows significantly positive impact and correlation between behavioural biases and financial literacy on financial inclusion variable.

Model Coefficients - FI						
Predictor	Estimate	SE	t	p	Stand.	Significance
Intercept	1.096	0.319	3.439	<.001		
FL	1.186	0.196	6.065	<.001	0.363	Significant with moderate positive effect
Overconfidence	0.478	0.064	7.463	<.001	0.476	Significant with strong positive effect
Present	-0.080	0.061	-1.325	0.187	-0.095	Not significant
Loss	-0.009	0.066	-0.133	0.894	-0.009	Not significant
Herd	-0.012	0.053	-0.230	0.818	-0.016	Not significant
Anchoring	0.172	0.062	2.774	0.006	0.183	Significant with less positive effect
Mental	0.048	0.051	0.930	0.354	0.062	Not significant

Source: Primary data

Interpretation

The above table states that, overconfidence, financial literacy and anchoring exhibit strong influence as significant predictors that increases financial inclusion, were as present, loss aversion, herding and mental accounting have negative influence that decreases financial inclusion.

Findings on Financial Behaviour

- Out of the total 176 respondents, 15 of them have experienced digital money scam, this indicates the necessity for cyber security and safety policy concerns for online customers.
- 30 respondents follow financial advice given by influencers on social media, 56 of them rarely follow and 81 of them never follow the advice out of 176 respondents.
- 18 respondents of total 176, have been benefitted from quick digital credit services like Buy Now Pay Later.

Suggestions

- Rural development plays a vital role in the nation's economic development as major industries and MSMEs are established in these areas. Hence, the people from these sectors should be aware of various bank and credit schemes available for their upliftment.
- As co-operative societies are associated more closely with the rural villagers, these societies can act as liaison for public banks in promoting digital schemes, thus helping for the upgradation of technology in rural areas.
- As the study involved student respondents, the present students of rural and urban are in par with the financial literacy, but rural sector students hesitate to widely use the

financial products and services, hence demanding for more awareness and training programme involving hands on experience might assist and assure them to use.

- As a measure to promote financial literacy, NSE had introduced a mandatory subject called Financial Education and Investment Awareness to all undergraduate students at different universities as a part of curriculum, this initiative should not just be in books, but a practical aspect of it would increase the knowledge of students.
- The institutions measure like a week campaign on E- banking services awareness, field visit to banks and government departments to get awareness on various schemes, invited lectures on online payment security would help students for a greater access to financial inclusion.
- To conduct outreach or extension activities from institution involving students to visit nearby villages to promote awareness on access to digital services, address the benefits and ease of using technology, live demonstration of financial products would help villagers understand and have a broad idea involving financial inclusion.

Conclusion

The study revolved around three concepts of financial inclusion, financial literacy and behavioural biases focusing on the target group students from rural and urban regions. From the above study it is evident that urban region students possess better knowledge and access to financial products, exhibit high behavioural biases as compared to rural students. Thus, enabling the policy makers and government to look upon for the rural sector development as it holds a significant role in the development of nation. Therefore, it is the utmost need to focus on student community as they become the connecting bridge who can educate their own family members to promote financial inclusion.

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