The Economics and Finance Letters
2025 Vol. 12, No. 2, pp. 251-266
ISSN(e): 2312-430X
ISSN(p): 2312-6310
DOI: 10.18488/29.v12i2.4227

Exploring financial literacy as a mediator in the theory of planned behavior on senior citizens' reverse mortgage purchase intentions

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Article History
Received: 26 February 2024
Revised: 21 May 2025
Accepted: 5 June 2025
Published: 19 June 2025

Keywords
Financial literacy
Financial stability
Reverse mortgage
Risk tolerance
Senior citizens
Theory of planned behavior.

JEL Classification:
D14; D03; G21; D81; E44; J14.

ABSTRACT

The increasing population in India necessitates implementing measures to ensure financial stability during their retirement years. A reverse mortgage is a very effective and unique option that allows senior citizens to transform the value of their home equity into a reliable source of income. This study examines the decision-making process of elderly individuals in India regarding reverse mortgage loans using the robust framework of the Theory of Planned Behavior (TPB). This study investigates the impact of the essential characteristics of the TPB model and the mediator role of financial literacy on the intention of older citizens to purchase reverse mortgage loans. The study highlights the lack of understanding among senior personnel regarding financial decisions about adopting reverse mortgages in their old age, specifically concerning their homes by formulating a hypothesis. The study intends to provide significant information to policymakers and financial institutions by examining the role of financial literacy as a mediator within the constructs of the TPB model. Furthermore, the findings enhance the condition of elderly individuals guiding policymakers on improving the range of products and services available to them, implementing a comprehensive strategy for making educated financial decisions and initiating financial literacy programs tailored explicitly for senior residents in India. Therefore, a reverse mortgage is the most suitable choice to ensure a stress-free retirement for elderly individuals in India as it can grant them financial stability and empowerment throughout their later years.

Contribution/Originality: This study focuses on the role of financial literacy among senior citizens in deciding to purchase reverse mortgage loans in India in contrast to the previous studies that mostly talked about financial literacy in Western contexts. It uniquely employs the TPB model in the study making it novel and relevant.

1. INTRODUCTION

Silver tide and silver tsunami are widely used worldwide (Cazacu, Mihai, & Ionescu, 2021). This fast-rising elderly population poses a serious challenge to the Indian economy and the financial stability of India's older inhabitants (Manisha, 2021). Although pension funds and fixed deposits offer some relief to senior citizens, the existing literature does not truly explore the various factors that influence the senior citizen's decision-making for reverse mortgage, especially the psychological and sociocultural barriers they must tackle. Nakajima and Telyukova (2017) analyzed various financial factors but they didn't cover the Indian context where several socio-cultural factors exist that significantly impact the decision-making power of senior citizens in India. This study focuses on these problems and aims to fulfill the gap that exists.

In this study, the very famous Theory of Planned Behavior (TPB) is used to study the decision-making process of senior citizens relating to reverse mortgage (Icek, 1985). The TPB focuses on psychological factors like attitude, subjective norms, and perceived behavioural control. This theory has been used effectively worldwide, including in India but very few have linked it with financial literacy, cultural norms and family expectations which occupy an essential part of the Indian context. In this study, various factors are integrated into the TPB model to understand senior citizens' decision-making superiorly (Ali, Raza, Puah, & Karim, 2017).

1.1. Reverse Mortgage in India

The concept of reverse mortgage was first introduced by the National Housing Bank (NHB) in 2007 (Manoj, 2010). Introducing this innovative instrument allows senior citizens who own a house to get a loan based on the value of their home (Haurin, Moulton, & Shi, 2018). Without having to sell their house, they may turn some of the equity on their property into income free from taxes. Unlike regular loans (Bartel, Daly, & Wrage, 1980) in a reverse mortgage, borrowers get payments from the lender. The debt is still outstanding as long as the borrower lives in the residence. It is only paid off upon the borrower's death by selling the house. Those eligible must be at least 60 years old and be Indian citizens. In joint borrowers, one spouse can be at least 55 years old. Moreover, the property must be free of any obligations and personally acquired and lived upon. The surviving spouse will keep ownership of the house and that retirees will continue to get a predetermined sum of money even after their spouse's death but due to the socio-cultural resistance, the uptake of this scheme is limited.

According to the data obtained by the Right To Information Act (RTI) between 2019 and 2023, numerous elderly Indians successfully obtained reverse mortgages from multiple Indian banks (Paul, 2011). However, the overall penetration rate of reverse mortgage is very low due to cultural reluctance and senior citizens lack of financial literacy. Punjab National Bank held the highest number of accounts totalling 2,502,299 with a combined value of ₹756,169.68 crores. Still, the demand is low compared to the potential buyers. Indian Overseas Bank established 166 accounts with a combined amount of ₹33.4447 crores whereas the Bank of Baroda established 854 accounts with a total of ₹395.31 crores. The aggregate balance of 108 accounts maintained by the Indian Bank amounted to ₹25.42 crores while the Union Bank held a total of ₹8.68 crores across 13 accounts. Additionally, IDBI had a cumulative balance of ₹1.381 crores across five accounts. The low demand against potential borrowers indicates a significant gap that this study aims to focus on and attempts to address.

1.2. Differentiated Approach for the Indian Context

However, the Indian social system necessitates a distinct approach. It is essential to consider the diverse range of cultural norms, family expectations, and varying degrees of financial literacy in India (Agarwal, Ambrose, & Yao, 2020). In western countries, the reverse mortgage model stresses financial independence whereas Indians prioritize family wealth and bequest motives making it challenging to make reverse mortgage decisions. An extensive analysis of many perspectives on reverse mortgages can be provided as follows: 1) Cultural Norms: In each given community or group, there is a set of commonly held views, attitudes, and practices known as cultural norms. Filial piety is an idea with Indian roots (Sharma & Kemp, 2012). Parents consistently prioritize the financial well-being of their children which may lead them to decline the use of their property for personal purposes in their old age. They may perceive this as imposing a burden on future generations. In India, older people do not view their homes primarily as a source of financial stability but as a cherished part of their cultural history. Furthermore, reverse mortgages contradict cultural norms by requiring individuals to gradually relinquish ownership of their homes (Hu, Xu, & Zhang, 2020). The literature shows that the previous studies have not explored this aspect of reverse mortgage decisions in India which this study aims to explore.

2) Family Expectations: In India, it is prevalent to have a joint family system where multiple generations cohabit in a single household. It is believed that opting for the reverse mortgage may affect the family's reputation,

as it may show that the family elders are not financially stable and indicate their dependence. It is essential to have a comprehensive understanding of the reverse mortgage scheme to overcome this issue. This study attempts to study the family expectations and their dynamics that act as barricades to reverse mortgage adoption, a part that has not been explored in previous studies (Dillingh, Prast, Rossi, & Brancati, 2017).

3) Financial Literacy: Financial literacy concerning reverse mortgage means that senior citizens know the terms and conditions of reverse mortgage, the dangers and returns, etc. in accepting reverse mortgage loans. It is essential to have financial literacy so that citizens can analyze the advantages and disadvantages of using reverse mortgage loans before accepting them. Some of the studies i.e., Balasubramnian and Sargent (2020) and Fong, Koh, Mitchell, and Rohwedder (2021) have explored global financial literacy but very few have applied and studied its role in reverse mortgage purchase decisions. This study attempts to fill this gap by studying the impact of financial literacy on the reverse mortgage by taking financial literacy as the mediating variable in the study. The study also explores whether some awareness programs could help senior citizens understand the benefits and the idea behind using the reverse mortgage and inspiring them to purchase reverse mortgage loans by building trust in them (Lusardi & Mitchell, 2011).

1.3. Research Gap and Contribution

Various studies have focused on financial literacy and decision-making (Balasubramnian & Sargent, 2020; Fong et al., 2021; Moreira Costa, De Sá Teixeira, Cordeiro Santos, & Santos, 2021; Raut, 2020) but there are very limited studies that have examined the impact of financial literacy on the decision-making of senior citizens regarding reverse mortgage loans in their retirement years in the Indian context. This gap has been addressed by this current study which considers the cultural norms and family expectations that make the study different from the studies already done in western countries. This study takes financial literacy as the mediator and examines how financial literacy affects the attitude, subjective norms and perceived behavioral control to bridge the knowledge and socio-cultural barriers among senior citizens relating to a reverse mortgage.

1.4. Significance

This innovative study has a great opportunity to bring about a remarkable understanding of different individuals. This study will help the policymakers in the country to design different comprehensive financial literacy initiatives by properly analyzing the determinants that seriously affect the purchasing decisions of senior citizens regarding reverse mortgages. The study will also enable the financial institutions to improve their product offerings by understanding the requirements and apprehensions of the senior citizens. This study aims to enhance and advocate for improved financial literacy among senior citizens in India, thereby managing the financial and economic challenges and enhancing the overall welfare of the rising elderly population in India.

1.5. Objectives

1) To evaluate if the theory of planned behavior constructs influences the senior's intention to purchase reverse mortgage loans.

2) To examine if financial literacy as the mediating variable influences the choice of senior citizens to purchase reverse mortgage loans.

The evaluation of the above objectives is anticipated to enhance senior citizens' financial literacy regarding reverse mortgage loans. Moreover, the study will benefit all stakeholders, like financial institutions by improving their product offerings, helping the government design policies and initiatives and help other individuals strategically plan their retirement years. A reverse mortgage can be considered a strategy for senior citizens to ensure financial stability in their retirement years. Therefore, it is necessary to examine the different constructs of the TPB model and how they interact with other factors in the decision-making process of older people to have a

proper understanding of the financial decisions of senior citizens. This study is essential in inspiring senior citizens to opt for reverse mortgage loans.

2. LITERATURE REVIEW

This paper investigates senior citizens' purchase intentions regarding reverse mortgages using the TPB model by Icek (1985). Consult the established framework of the TPB as shown by Krueger Jr, Reilly, and Carsrud (2000) as it will help one to have a better knowledge of the objectives driving financial decision-making. The paper investigates the features of the TPB model that affect senior persons' preparedness to pursue reverse mortgages: attitude, subjective norm, and perceived behavioural control, in particular, three critical aspects. Financial literacy-an individual's knowledge and experience in financial matters is included in the TPB paradigm as a mediating element (Davidoff, Gerhard, & Post, 2017).

However, the literature lacks consistency in terms of how the TPB model fits particularly senior individuals in the Indian setting. Particularly among seniors, the cultural, familial, and financial situation that moulds financial decisions in India has not been adequately investigated. This study will close this gap by examining the correlation among Indian senior citizens between financial literacy and reverse mortgage acceptance. This study also examines how seniors' choices differ from those of Western populations depending on the fundamental TPB elements' moderation by financial literacy and cultural norms. Dealing with this disparity will help better grasp the particular requirements and issues, this group has enabled more customized financial policies and products.

The hypothesis suggests that the correlation between the elements of the TPB model and purchase intention is impacted by the seniors' level of financial literacy. Home equity which is shown as the financial standing and the income shown as the risk tolerance of older adults may influence their decision to purchase a reverse mortgage loan. Older adults' saving and risk avoidance behaviour directly influences the chances of purchasing reverse mortgage loans. There is a lack of sufficient previous studies that consider financial literacy as the mediator along the TPB model regarding reverse mortgages.

Table 1 explores the different studies done on reverse mortgage loans.

Table 1. Reverse mortgage studies.

Sr. no.	Study details and study type	Findings	Future scope
1	Willingness to consider applying for a reverse mortgage in Hong Kong Chinese middle-aged homeowners. Study type: Survey research (Chou, Chow, & Chi, 2006).	The openness towards reverse mortgage is affected by their financial position, capacity to save for retirement and willingness to live in their own house.	Further research is needed to examine reverse mortgages' long-term social and financial impacts on middle-aged homeowners, especially when comparing different cultures.
2	Defusing the risk of borrowing: The psychology of payment protection insurance decisions. Study type: Psychological analysis (Ranyard & McHugh, 2012).	Understanding psychological elements and risk perceptions is vital in formulating payment protection insurance products. Confidence acts as an essential factor in consumer acceptance.	Research needs to investigate the psychological factors influencing reverse mortgage decisions to align products more effectively with consumer trust and risk perceptions.
3	Reverse mortgage pricing and risk analysis allow for idiosyncratic house price and longevity risk. Study type: Risk analysis (Shao, Hanewald, & Sherris, 2015).	The price of a reverse mortgage depends on property price risk and longevity risk. The model in this study represents the correct computation of these risks and their effects.	Future studies should prioritize enhancing risk assessment models and examining the impact of including other hazards such as policy changes and economic downturns on the pricing of reverse mortgage.
4	Risk-neutral valuation of the non-recourse protection in reverse mortgages: A case study for Korea. Study type: Valuation study (Kim & Li, 2017).	The methodology for evaluating the value of non-recourse protection in reverse mortgages in a risk-neutral way significantly influence price and attractiveness.	Further research is needed to examine the impact of non-recourse protection valuation on consumer choice and market stability in various market conditions.

Sr. no.	Study details and study type	Findings	Future scope
5	Profitability and risk profile of reverse mortgages: A cross-system and cross-plan comparison. Study type: Comparative analysis (Lee, Kung, & Liu, 2018).	Reverse mortgage systems and schemes vary significantly regarding their profitability and risk profiles. Regional and demographic differences require customized approaches.	Future research should focus on conducting a comparative analysis of emerging reverse mortgage markets and identifying the optimal balance between profitability and risk across different systems.
6	To borrow or insure. Long-term care costs and the impact of housing. Study type: Empirical research (Shao, Chen, & Sherris, 2019).	Reverse mortgages provide an option to recover the accumulated equity in their homes to help them maintain their life care expenses after retirement. However, obtaining a loan by giving a home as collateral security to a bank is complex.	Future research should include comparative analyses of the enduring financial impacts of reverse mortgages and alternative long-term care funding choices while considering diverse economic and health conditions.
7	The reverse mortgage conundrum: Perspectives of older households in Australia. Study type: Qualitative interviews (Whait, Lowies, Rossini, McGreal, & Dimovski, 2019).	Senior Australian households exhibit differing views on reverse mortgages, including product intricacy, potential loss of home equity, and trust in banking institutions.	Researchers and policymakers must create more straightforward options and initiate financial literacy initiatives to motivate people to use reverse mortgages.
8	Prepayment risk in reverse mortgages: An intensity-governed surrender model. Study type: Risk modelling (Shi & Lee, 2021) .	The possibility of early repayment in reverse mortgages can significantly affect the financial viability of these products.	The lenders and borrowers will benefit by employing strategies that minimize prepayment risk. Therefore, future research should focus on the factors that impact prepayment behaviours.
9	Willingness to accept reverse mortgage. Study type: Proceedings paper (Yee, Chong, Yusof, & Binti, 2023)	Acceptance of reverse mortgages is contingent upon a high level of financial understanding, perceived advantages, and socioeconomic status.	Further research is needed to explore the influence of cultural attitudes and demography on the acceptance of reverse mortgages and the effectiveness of personalized financial education initiatives in addressing specific concerns.

2.1. The Relationship between Attitude and the Reverse Mortgage Option

Attitude is a key factor in decision-making in the context of reverse mortgages. The study of Yager (2006) is the base of research in this field.

The TPB model's 2015 version emphasises how the attitude of senior citizens towards reverse mortgage shows their positive or negative inclination towards using this option in their retirement years (Dillingh et al., 2017). Positively, a reverse mortgage is a source of financial stability, sovereignty and a lasting legacy. However, negative thoughts may come from fraudulent actions, complicated financial outcomes, or the fear of losing ownership of their house property. The study by Davidoff et al. (2017) shows an important link between one's opinion regarding reverse mortgages and their tendency to use them.

Hypothesis 1: The attitude of senior citizens in India dramatically impacts their decision to purchase reverse mortgage loans.

2.2. The Impact of Reverse Mortgages on Perceived Behavioral Control

One important construct of the TPB model is perceived behavioural control (PerBC) (Krueger Jr et al., 2000; Mohammed & Sulaiman, 2017). PerBC indicates a senior citizen's ability to handle the procedures of obtaining and utilizing a reverse mortgage. Individuals with a high PerBC are confident and competent in comprehending loan terms, navigating the loan application process, and handling potential complications. Potential investors may reconsider investing in a reverse mortgage. Conversely, those with lower PerBC lack the required support structures or feel overwhelmed by the complexity of the procedure. Researchers have focused more on attitudes than the impact of PerBC on adopting reverse mortgages. Fortunately, empirical support exists for a direct

relationship between variables (Yao, Luo, & Loh, 2013). Understanding PerBC is crucial because of the complexity of reverse mortgages. Therefore, the study put up the subsequent hypothesis:

Hypothesis 2: The degree of behavioural control that older citizens perceive to have greatly influences their likelihood of utilizing reverse mortgages.

2.3. Reverse Mortgages and Subjective Norms

Subjective norms (SUBN) as defined by Shah Alam and Mohamed Sayuti (2011) refer to the individual's perception of societal obligations to perform or abstain from specific actions. When it comes to reverse mortgages, SUBN serves as an advocate for seniors representing their perspective on how their family members see this particular loan. Individuals who derive a sense of validation from their social circles may be more open to contemplating reverse mortgages if they perceive a broad societal endorsement of these loans. Individuals may exhibit reduced inclination towards considering reverse mortgages if they detect a prevailing opposition within their social circle. There is a lack of study on the impact of SUBN on the desire to use reverse mortgages. The specific mechanisms within the Indian population are not well comprehended. However, some data suggests that SUBN may have an influence (Yao et al., 2013). Recognizing the impact of SUBN is essential due to the significance of family and community in Indian culture. Hence, we put up the subsequent hypothesis:

Hypothesis 3: The intentions of Indian seniors to utilize reverse mortgages are significantly impacted by subjective standards.

2.4. Facilitating Financial Literacy

The fundamental objective of this study is to evaluate the cognitive elements that impact older adults' decision-making process in selecting reverse mortgages. Awareness of one's financial position is vital (Lusardi & Mitchell, 2011; Yao et al., 2013). Furthermore, older citizens may make educated choices based on their financial literacy by acquiring knowledge about the intricacies of reverse mortgages and their advantages and disadvantages. Yao et al. (2013) found that individuals with good financial understanding can assess if a reverse mortgage aligns with their financial goals and risk tolerance. Moreover, possessing financial literacy may assist borrowers in effectively managing their loans, preventing fraud and making well-informed decisions at each phase (Lusardi & Mitchell, 2011). Financial literacy enables an individual to avoid misunderstandings and issues associated with reverse mortgages. Financial literacy might potentially affect seniors' inclination to utilize reverse mortgages by influencing the constructs of the TPB model (attitude, subjective norms, perceived behavioural control). Thus, the study put forth the subsequent hypothesis:

Hypothesis 4: Financial literacy significantly influences senior citizens to purchase reverse mortgage loans.

Hypothesis 5: Financial literacy strongly mediates attitude and significantly affects the intention to purchase reverse mortgage loans.

Hypothesis 6: Financial literacy mediates social norms and significantly affects the intention to purchase reverse mortgage loans.

Hypothesis 7: Financial literacy mediates perceived behaviour control and significantly affects the intention to purchase reverse mortgage loans.

2.5. Conceptual Framework

Table 2 summarises the research focusing on the reverse mortgage purchase intention based on the TPB model used in this study. The hypothesis of this study was formulated by comparing the models shown in Figure 1.

Table 2. Reverse mortgage purchase intention based on the TPB model.

Authors	Dependent variable	Independent variables	Mediation/ Moderation variables	Findings
Liao, Chen, and Yen (2007)	Continued use of e-service	Perceived usefulness, perceived ease of use, and customer satisfaction.	None	It combines the TPB (Technology acceptance model) with customer satisfaction to understand the continuous utilization of electronic services. Evaluating the proposal's feasibility across different online service sectors is advisable.
Amin, Abdul-Rahman, and Abdul-Razak (2013)	Adoption of Islamic home financing	Various factors, including religious beliefs and cultural factors.	None	Presents a comprehensive framework that includes factors influencing the approval of Islamic home loans. Seeks further investigation into cultural and religious elements.
Mohammed and Sulaiman (2018)	Reverse mortgage use intention	Perceived benefits, social influences, and financial literacy.	None	Identified key factors influencing the intention to use reverse mortgages. Suggests further empirical testing. Significant factors were found to affect the desire to use reverse mortgages. Requests for more thorough testing.
Russell, Strong, Krausman, and Lawson (2021)	Retirement planning behaviors	Financial rules of thumb.	None	Proves that people's adherence to general financial guidelines greatly affects how they save for retirement. Calls for additional study into individualized financial planning.

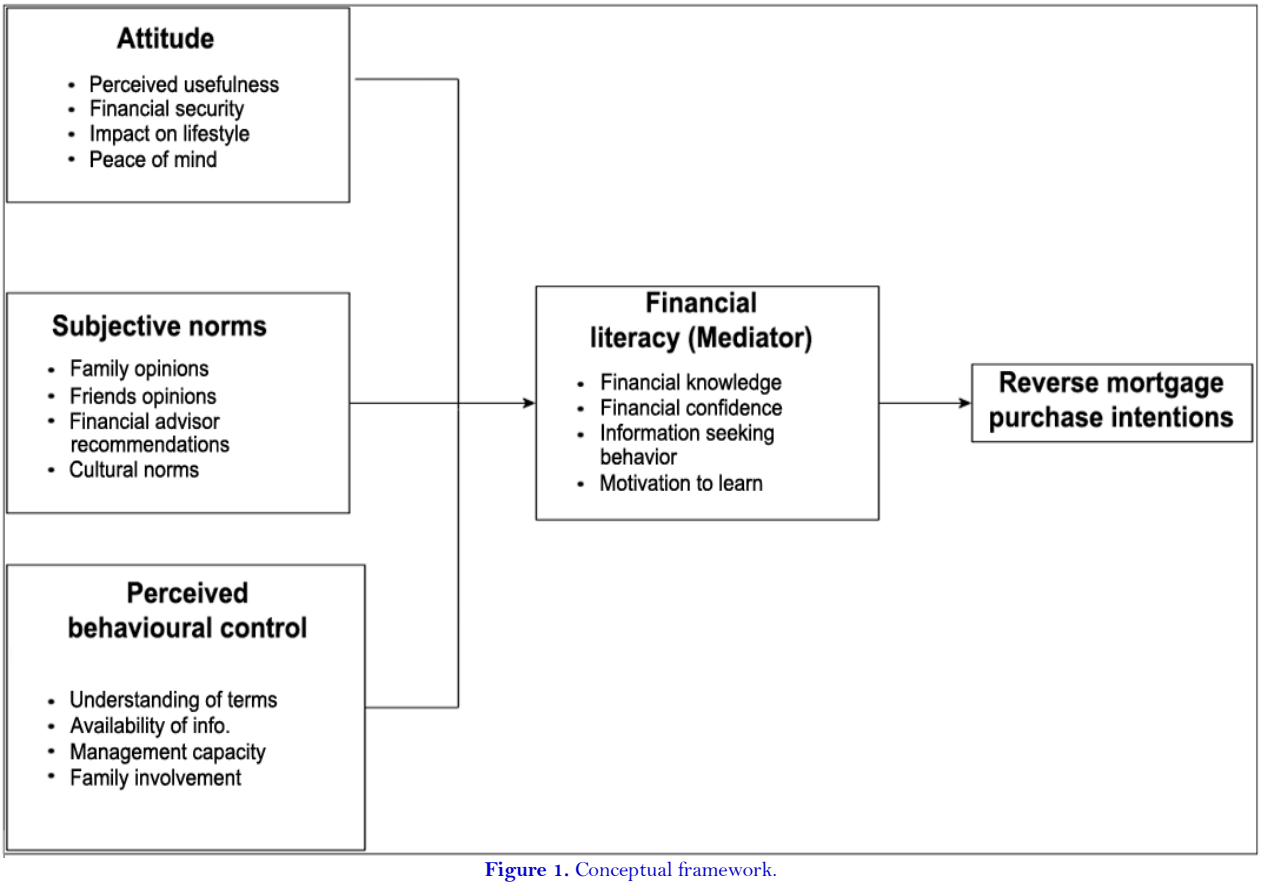

Figure 1. Conceptual framework.

3. METHODOLOGY

This study employed non-random convenience sampling to gather data in a time- and cost-efficient manner, similar to Pasher et al. (2013). The target population for this research comprised individuals aged 50 and above who resided in India. This demographic was chosen because seniors may be considering alternative financial options like reverse mortgages, particularly in the context of post-retirement planning. A pilot study with 50 respondents helped refine the research instrument.

Following the pilot study, a sample size of 344 participants were determined using G*Power software for SEM analysis. This sample size is adequate to detect a small effect size (.01) for a model with one latent variable and four observable variables, including the mediating variable (Cumming, 2013; Westland, 2010). The sample period was selected based on the increasing interest shown for a reverse mortgage by senior citizens followed by the efforts taken by the government to introduce various financial products for senior citizens.

Data collection leveraged an online approach utilizing a Google Form survey instrument. Disseminating the survey link through various channels like social media groups or senior citizen centres could help reach a broader and more diverse pool of participants. This online approach aimed to maximize participation and capture a wide range of perspectives from the target population of seniors in India. Moreover, secondary data is collected from different online sources including government reports, financial planning for senior citizens, websites, etc. which can be easily accessed online.

3.1. Justification for SEM Selection

Structural Equation Modelling (SEM) is considered very effective in analyzing the relationship between latent and observable variables based on the theory of planned behavior which ultimately supports the model selected in the study. The various variables under this study, like attitude, subjective norms, perceived behavioural control, financial literacy, and purchase intention are all interrelated to each other in one way or another, so to analyze this interconnected relationship between the variables. SEM is considered to be the best option as it helps contemporary analysis between various relationships and their mediating effects. SEM is considered an appropriate choice for performing several models in the study due to the unique features of SEM that help investigate the direct and indirect effects of interconnected variables. Understanding how financial knowledge shapes the TPB constructs and the buy intention relationship is essential. Hair, Risher, Sarstedt, and Ringle (2019) contend that SEM is more robust when addressing complicated models with mediators using SEM is consistent with past studies.

3.2. Measurements

This study utilizes a researcher-designed survey instrument to investigate factors influencing reverse mortgage purchase intention among seniors in India. All quantitative data is captured on a five-point Likert scale (strongly agree = 5, strongly disagree = 1). The core TPB constructs of attitude perceived behavioral control, and subjective norm are measured using researcher-designed items informed by the TPB by Shah Alam and Mohamed Sayuti (2011). Financial literacy, the mediating variable is also assessed using a researcher-designed scale. This original instrument allows for a comprehensive examination of a senior's core beliefs, social influences, perceived control, and financial knowledge influence their decision-making regarding reverse mortgages within the Indian context. Figure 2 represents the measurement model's latent variables showing a relationship between them and their observed indicators.

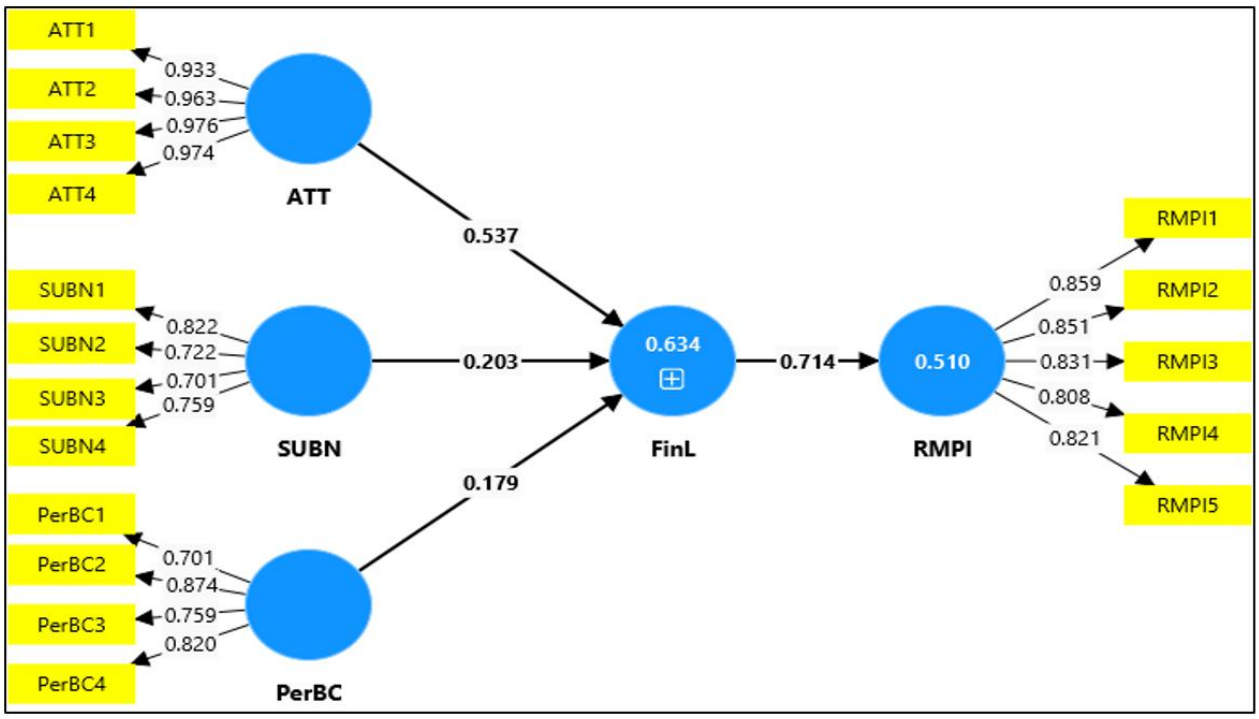

Figure 2. Measurement model.

4. RESULTS

The path analysis shows that attitude (ATT) strongly and positively impacts financial literacy (FinL) with a route coefficient of 0.537. The impact of perceived behavioral control (PerBC) on financial literacy is minimal (0.179) while subjective norms (SUBN) have a weak positive influence (0.203). There is a positive correlation between financial literacy and the chance of choosing a reverse mortgage, as evidenced by the significant impact of financial literacy on Reverse Mortgage Purchase Intentions (RMPI) (0.714).

Comparison with Previous Studies: The results of this study align with prior research by Lusardi and Mitchell (2011) who also found a significant positive relationship between financial literacy and financial decision-making. Similar findings were reported by Shah Alam and Mohamed Sayuti (2011) who demonstrated that individuals with higher financial literacy are more likely to exhibit stronger purchase intentions for various financial products. Additionally, the weak influence of perceived behavioural control and subjective norms found in this study echoes the findings of Lim (2013) who showed that while attitudes strongly influence financial decision-making, external pressures and control beliefs may have a lesser effect.

Table 3. Reliability and validity.

Path	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ATT	0.973	0.974	0.980	0.924
FinL	0.891	0.895	0.920	0.696
PerBC	0.800	0.829	0.869	0.626
RMPI	0.891	0.894	0.920	0.696
SUBN	0.759	0.796	0.839	0.566

Table 3 shows the reliability statistics for different constructs examined in the study which include Cronbach's alpha, composite reliability (rho_a and rho_c), and average variance extracted (AVE). These statistics are crucial for evaluating the internal coherence and accuracy of the measurement model.

Interpretation: Strong internal consistency is indicated by Cronbach's alpha scores for all constructions above the required level of 0.7. With scores of 0.973 and 0.891, attitude (ATT) and financial literacy (FinL) show

outstanding dependability. Perceived Behavioral Control (PerBC) and subjective norms (SUBN) indicate strong reliability with corresponding scores of 0.800 and 0.759. With a score of 0.891, Reverse Mortgage Purchase Intention (RMPI) is reliable.

Both rho_a and rho_c values exceed 0.7 for all constructs verifying excellent reliability. With rho_a and rho_c values close to 0.98 and 0.920, respectively, attitude (ATT) and financial literacy (FinL) once more show remarkable consistency. While RMPI's values indicate excellent reliability with rho_a = 0.894 and rho_c = 0.920, Perceived Behavioral Control (PerBC) and Subjective Norms (SUBN) have good reliability.

All constructs' average variance extracted (AVE) values exceed 0.5 criteria suggesting sufficient convergent validity. With AVE values of 0.924 and 0.696 , attitude (ATT) and financial literacy (FinL) show excellent convergent validity correspondingly. While Subjective Norms (SUBN) have good convergent validity with an AVE of 0.566, Perceived Behavioral Control (PerBC) and RMPI also show high convergent validity.

4.1. Discriminant Validity

Henseler, Ringle, and Sarstedt (2015) defined discriminant validity as a measure of the degree of variance between one construct of the research model and the rest of the constructs. The Fornell-Larker criterion and Heterotrait-Monotrait ratio (HTMT) are used for measuring this validity (Ab Hamid, Sami, & Mohmad Sidek, 2017). Table 4 represents the discriminant validity of the latent variables. Each cell represents the relationship between the heterotrait and the correlation between the monotrait. The values less than 0.85 represent adequate discriminant validity. Table 5 also represents discriminant validity and the diagonal value shows the square root of AVE. The discriminant validity is supported if the AVE exceeds the squared correlation with other constructs.

Table 4. Heterotrait-monotrait ratio (HTMT).

-	ATT	FinL	PerBC	RMPI	SUBN
ATT					
FinL	0.812				
PerBC	0.759	0.714			
RMPI	0.771	0.791	0.727		
SUBN	0.556	0.615	0.451	0.437	

Source: Output by smart Pls version 4.0.

Table 5. Fornell-Larker criterion.

-	ATT	FinL	PerBC	RMPI	SUBN
ATT	0.961				
FinL	0.764	0.835			
PerBC	0.677	0.622	0.791		
RMPI	0.721	0.714	0.627	0.834	
SUBN	0.519	0.552	0.389	0.380	0.752

4.2. Structural Model Assessment

An evaluation of the structural model was conducted following the obtaining of important information from the measurement model. The Partial Least Squares Structural Equation Modelling (PLS-SEM) bootstrapping method was used with a significance threshold of 5%. Bootstrapping is a statistical technique used to evaluate the accuracy and reliability of a structural model without making assumptions about the underlying distribution of the data.

Figure 3 represents the structural model generated by Smart PLS sem depicting the relationship between the latent variables under study and their observed indicators.

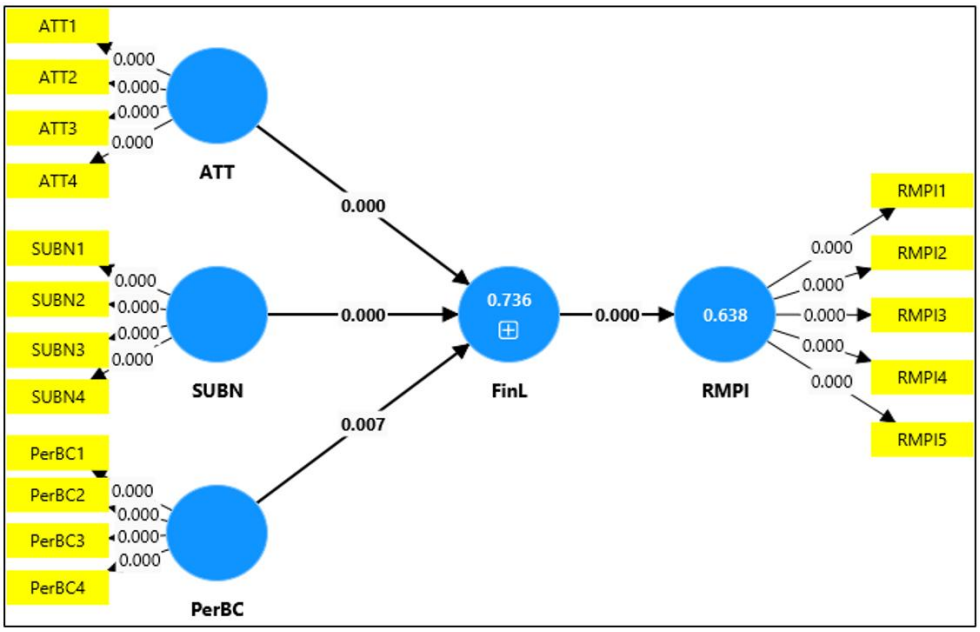

Figure 3. Structural model.

4.3. Hypothesis Testing

Table 6 represents the output generated by hypothesis testing showing a significant relationship between the construct under study.

Table 6. Summary of hypothesis testing.

Path	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ATT -> FinL	0.502	0.500	0.081	6.163	0.000
FinL -> RMPI	0.799	0.799	0.035	22.628	0.000
PerBC -> FinL	0.224	0.226	0.082	2.721	0.007
SUBN -> FinL	0.250	0.250	0.056	4.495	0.000

Source: Output by smart Pls version 4.0.

Interpretation: Attitude towards financial literacy (ATT) and FinL show a strong, statistically significant positive connection. One finds this with a low p-value of 0.000 and a high path coefficient of 0.502. Higher financial knowledge is correlated with positive financial attitudes.

Reverse mortgage buying intentions are favourable when financially literate (FinL). A 0.000 p-value and a 0.799 path coefficient confirm this. This implies that those with financial literacy are more likely to consider reverse mortgages.

Though more minor, perceived behavioural control (PerBC) and subjective norms (SUBN) equally statistically increase financial literacy. With p-values of 0.007 and 0.000, the route coefficients are 0.224 and 0.250. Those who feel confident in their money management abilities and sense society's pressure to be financially educated are more likely to be financially literate.

4.4. Mediation Analysis

Table 7 shows the indirect relationship among the constructs under study. All the mediation pathways show significant results as the p-values are low.

Table 7. Results of mediation analysis.

-	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
ATT -> FinL -> RMPI	0.401	0.400	0.068	5.864	0.000
PerBC -> FinL -> RMPI	0.179	0.180	0.067	2.673	0.008
SUBN -> FinL -> RMPI	0.200	0.200	0.044	4.549	0.000

Interpretation: 1. Attitude's indirect influence on reverse mortgage purchase intentions through financial literacy is 0.401. A highly significant ($p < 0.001$) t-statistic of 5.864 suggests that financial literacy significantly moderates the link between attitude and reverse mortgage purchase intentions.

2. Through financial literacy, perceived behavioral control indirectly affects reverse mortgage purchase intentions with a value of 0.179. The significance is $p < 0.05$ with a t-statistic of 2.673. This implies, to a modest but essential degree, financial literacy moderates the association between perceived behavioral control indirectly affects reverse mortgage purchase intentions.

3. Subjective norms indirectly affect reverse mortgage purchase intentions by means of financial literacy with an indirect value of 0.200. The t-statistic is 4.549. This suggests that the relationship between subjective norms and reverse mortgage purchase intention is mediated by financial literacy.

In short, through financial literacy (FinL), attitude (ATT) has a substantial and considerable indirect effect on reverse mortgage purchase intentions (RMPI). Through FinL, perceived behavioural control (PerBC) has a minor but significant indirect influence on RMPI. Through FinL, Subjective Norms (SUBN) have a modest and notable indirect effect on RMPI.

5. DISCUSSION

This study is unique as it incorporates financial literacy as a mediator in the TPB model to study senior citizens' reverse mortgage purchase intention. While some previous studies have taken a more all-encompassing approach, emphasizing financial literacy and decision-making (Balasubramnian & Sargent, 2020; Davidoff et al., 2017; Fong et al., 2021; Lusardi & Mitchell, 2011) others have often focused on selected aspects such as attitude. However, this study offers a comprehensive understanding of the factors influencing reverse mortgage decisions by incorporating them into the TPB model and underlining the mediating function of financial literacy. Regarding reverse mortgages, in particular, the new strategy suggested in the study shows how financial literacy could help close the disparity between society's expectations, personal opinions about their agency, and financial behaviour.

Financial literacy is necessary based on the data correlation since it closes the difference between reasonable financial behaviour and personal opinions. According to the concept, attitude, perceived behavioural control, and subjective standards foster financial literacy affecting intentions to get a reverse mortgage. This link underlines the need to realize how many social and psychological factors and financial data affect the final decision-making process for reverse mortgages. Utilizing the identification of these interdependencies, the study highlights how addressing one component such as improving financial attitudes may have broader consequences on financial conduct.

The study showed that attitude (ATT) and financial literacy (FinL) were relatively highly correlated with a high path coefficient of 0.502 and a high p-value of 0.000. This data indicates a good correlation between financial hope and degrees of financial expertise. According to past studies, older people would be more likely to become financially educated if their attitudes about money changed (Hu et al., 2020; Rai, Dua, & Yadav, 2019). This link's strength emphasises the need to focus on attitudes and create financial literacy initiatives among seniors. These

initiatives encourage favourable attitudes towards financial literacy significantly increasing elders' capacity to make wise financial decisions such as evaluating reverse mortgage options.

Moreover, the study shows that financial literacy based on a path coefficient of 0.799 and a p-value of 0.000 substantially impacts RMPI. Strong personal financial knowledge makes one more likely to think about a reverse mortgage. These findings imply that persuading more elderly people to seek reverse mortgages depends on raising their understanding of financial difficulties. This outcome is significant since it shows financial literacy not only as a background factor but also as a direct and powerful motivator of plans for acquiring a reverse mortgage. Programs designed to improve senior financial understanding could thus actually result in a meaningful increase in reverse mortgage acceptance, hence providing financial stability in retirement.

With p-values of 0.007 and 0.000 accordingly, path coefficients of 0.224 and 0.250 reveal that Perceived Behavioral Control (PerBC) and Subjective Norms (SUBN) have a statistically significant effect on financial literacy. These results show that those with more financial literacy felt competent in managing their resources and followed society's expectations.Through FinL, subjective norms (SUBN) have a slight but notable indirect influence on RMPI. This study suggests that objective criteria are not a good indicator of actual financial behaviour along with past research (García-Rodríguez, Ruiz-Rosa, Gutiérrez-Taño, & Gil-Soto, 2020; Xiao, 2008). This underlines the need to prioritize social and cultural elements in developing financial literacy among senior citizens. Financial literacy campaigns can more effectively motivate for choose a reverse mortgage by targeting subjective criteria and perceived behavioural control.

This paper is an original contribution examines the link between RMPI and the TPB model using financial literacy as a mediator. Particularly concerning difficult financial decisions like reverse mortgages, the inclusion of financial literacy as a mediator shows how it bridges the gap between mental models and real action. With attitudes, subjective criteria, and perceived control, financial literacy is the secret to transforming intentions into concrete financial decisions, emphasizing the role of a mediator in the study. In the reverse mortgages context, the results stress financial literacy and identify discrepancies between people's concepts, sense of agency, cultural standards, and real financial decisions.

This study aims to inspire elderly people to use reverse mortgages and increase their financial literacy. It achieves this by looking at factors influencing their financial decisions and pinpointing areas where particular actions should be implemented.

6. CONCLUSION

Using the Theory of Planned Behavior (TPB) paradigm and including financial literacy (FinL) as a mediating element, this study closely investigates the intentions of seniors to engage in Reverse Mortgage Purchase (RMPI). Regarding complicated financial products like reverse mortgages, the findings offer important new perspectives on the psychological and social factors of financial decision-making. This study fills in a significant need in the literature by including financial literacy in the TPB model, therefore mostly ignoring the mediating function of financial knowledge in bridging attitudes, subjective norms, and behavioural control with real-world financial behaviours. Our results show that people's level of financial literacy greatly influences their opinions on subjective criteria, judged ability to control their behaviour, and reverse mortgages. These realizations highlight the need for financial literacy not just as a background element but also as a direct mediator in decision-making. This is a significant contribution to the field since earlier studies have sometimes looked at these components separately, ignoring the connectivity underlined in this work. From a theoretical standpoint, this study shows how financial literacy moderates the link between psychological factors and financial behaviour, extending the use of the TPB model. This more general application of the TPB paradigm brings a more complex awareness of how personal attitudes, perceived control, and societal forces interact with financial knowledge to affect decisions. Moreover, it creates opportunities for the following studies to investigate comparable mediating influences of financial literacy

among different financial products and choices. These results imply that the reverse mortgage market might be much influenced by efforts meant to raise financial literacy. Targeting senior folks primarily, programs intended to increase financial education will help them understand reverse mortgages and boost their attitudes and confidence in handling their money. This study emphasizes the need for a more all-encompassing approach to financial education that tackles the psychological and social factors on decision-making, promoting a more significant acceptance of reverse mortgages as a tool for financial security in retirement.

The study concludes by contributing substantially to the ongoing discussion on senior financial security by highlighting the importance of financial literacy and psychological factors in determining reverse mortgage decisions. This study fills a gap in the literature by highlighting the mediating role of financial literacy and offers new ways of thinking about the relationships between knowledge, attitude, and behaviour as they pertain to financial decision-making. This might be expanded upon in future research by looking at similar frameworks in different demographics and financial contexts allowing us to learn more about the wide range of financial behaviours influenced by financial literacy.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The Ethical Committee of the SRM University, Delhi-NCR, Sonepat, Haryana, India has granted approval for this study on 18 March 2025 (Ref. No. SRMUH/UEC/2025/001).
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Data Availability Statement: The corresponding author can provide the supporting data of this study upon a reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

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