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**FINANCIAL BEHAVIOUR AND RETIREMENT  
PLANNING: MODERATING ROLE OF FINANCIAL  
KNOWLEDGE**

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***Abstract***

*Financial literacy is an important determinant of retirement planning. It deals with knowledge of financial products, financial concepts including the ability to apply mathematical skills for financial decision-making. In the past, studies are majorly conducted in the area of financial literacy and retirement planning, however, limited studies have been conducted empirically analyzing the role of financial knowledge, financial attitude, behavior taken together, and their impact on retirement planning. In this paper, we have investigated the relationship between financial attitude, behaviour, and retirement planning in the context of an emerging economy like India. Further, we study the mediation effect of financial behaviour and the moderation effect of financial knowledge on financial attitude and retirement planning. With the help of Structural Equation Modelling, we analysed and found that financial behaviour and retirement planning are significantly and positively related.*

**Key Words:** *Financial Knowledge, Financial Literacy, Financial Behaviour, Financial Attitude, Retirement Planning*

## INTRODUCTION

All of us should save for future needs. This becomes more significant in the absence of post-retirement benefits in developing economies like India. Retirement planning is important for wealth creation. This necessitates planning and saving early (Bongini & Cucinelli, 2019). Financial knowledge, several behavioural and socio-economic traits affect the retirement planning of individuals. Poor planning for retirement is the result of poor financial understanding. To support this statement prior studies, suggest that individuals are illiterate and unskilled to take a responsible financial decision (Bernheim & Garrett 2003; Lusardi, 2005, 2010 & 2011).

Financial literacy is an important determinant of retirement planning (Lusardi & Mitchell, 2011; Kumar *et al.*, 2019). Financial Literacy deals with knowledge of financial products; financial concepts including the ability to apply mathematical skills for financial decision-making (Hastings *et al.*, 2013). Financial knowledge, financial attitude, and financial behavior are important dimensions of financial literacy (Atkinson & Messy 2012; OECD 2013). It can thus be stated that financial knowledge is a significant determinant of financial literacy. Financial knowledge is the ability to apply knowledge for one's own financial welfare (Mudzingiri *et al.*, 2018). Financial attitude deals with the perception about money and an individual's attitude describing one's behavior in financial matters (Taneja, 2012). Behavioural economists believe that financial knowledge is related to the financial attitude which can further impact financial behaviour (Koropp, Kellermanns, Grichnik, & Stanley, 2014, Pal *et al.*, 2021). An individual with sound financial knowledge and attitude can develop well-being and better financial planning for his family.

Financial planning often involves planning for retirement. Existing literature suggests that retirement

planning leads to better and healthy life post-retirement. Those who save for retirement maintain a higher standard of living and are satisfied with life (Noone *et al.*, 2013). The literature further explains that some psychological activities and economic theories affect planning for retirement (Taylor & Doverspike, 2003; Noone *et al.*, 2010). As an example, as per life cycle theory, planning finances leads to a higher standard of living which in turn results in better psychological and physical health. (Rosenkoetter & Garris, 2001; Stephens *et al.*, 2011). Thus, financial planning is an important aspect to live a quality life post-retirement, and key determinants of financial literacy namely financial behavior, attitude and knowledge affect retirement planning.

The structure of the paper is as follows. Section 1 outlines the brief introduction to the topic and the variables covered namely financial knowledge, financial attitude, financial behavior, and retirement planning. Section 2 deals with review of literature, identification of research, and hypothesis development Section 3 presents the research design including data collection method, section 4 covers applying measurement model, analyzing data, and hypothesis testing, section 5 deals with the discussion and practical implications of the study followed by concluding remarks.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Around the world, several studies have supported the positive relationship between financial literacy and retirement planning. Prior studies proved that higher financial literacy facilitates sound financial decision-making. Further, individuals with sound financial knowledge show higher retirement confidence (Lusardi & Mitchell, 2007), have higher participation in the share market (Yoong, 2010), and tend to have better asset accumulation (Stango & Zinman, 2009;

Hilgert *et al.*, 2003). Besides financial knowledge, an individual's psychology and behaviour have an impact on financial decision making. Financial distress is caused among individuals based on their attitude towards money and debt (Lea *et al.*, 1995). This necessitates understanding the role of financial attitude while planning for retirement.

The financial attitude of an individual may determine his or her financial behaviour. Attitudes also determine the decision-making process of a consumer (Zhang & Kim, 2013). Attitude towards money management is dependent on childhood experience including socio-economic factors (Taneja, 2012). A financial attitude is one's perception of money. The attitude further delineates an individual's behaviour in financial matters. So, the demographic characteristics of an individual affect the financial attitude and thus financial planning. Literature suggests that financial knowledge and behaviour are positively related (Hilgert *et al.*, 2003). Some evidence, however indicates that improved financial knowledge does not automatically result in improved behaviour (Braunstein & Welch, 2002). Also, financial decisions of parents significantly influence the financial literacy levels. Also, those with higher financial knowledge possess a positive attitude and behaviour towards money management (Jorgenson, 2007). The study further supported that financial literacy is determined by the attitude and behaviour of individuals towards financial matters.

### Research Gap

Although most of the studies are conducted in the area of financial literacy and retirement planning, however, limited studies have been conducted empirically analyzing the role of important variables of financial literacy called financial knowledge, financial attitude, behaviour, and their impact on retirement planning. We have filled this gap by understanding the link between financial attitude, behaviour, and retirement planning in the context of an emerging economy like

India. Further, we study the mediation effect of financial behaviour and the moderation effect of financial knowledge on the relationship between financial attitude and retirement planning.

### Hypothesis Development

The financial behaviour of an individual refers to the ability to budget, plan and control the requirements of funds for regular and future needs. Pankow (2012) defines financial attitude as a state of mind, opinion, and judgment of a person about finances. There have been some studies conducted on financial behaviour and financial attitude. Previous literature suggests that financial attitude partially affects financial behaviour (Amanah *et al.*, 2016). Further, there exists positive relationship between financial attitude and financial behaviour (Herdjiono & Darmanik, 2016; Mien & Thao, 2015).

On the contrary, there are some researches that show no relationship between these variables. One such study carried by Novita & Maharani (2016) argues that financial attitude and financial behavior are not related. Based on the literature review we found gaps and therefore the following hypothesis is developed.

**H1:** *Financial Attitude (FA) has a significant positive impact on Financial Behaviour (FB)*

The financial knowledge for retirement planning is to cope up with the increasing cost of living and making prudent financial decisions to manage income once an individual retires. Financial knowledge along with attitude shapes the financial behavior of individuals. Reading articles, attending seminars and workshops, and using available digital resources can lead to change in retirement planning behaviour (Gough & Niza, 2011; Tiwari *et al.*, 2020). Parents at home, friends and colleagues influence the financial planning behavior of an individual.

**H2:** *Financial Behaviour (FB) has a significant positive impact on Retirement Planning (RP).*

The need for retirement income is different for different people. There are various demographic factors including age, gender, occupation, education, income which affect the retirement planning of individuals (Folk *et al.*, 2012; Ng *et al.*, 2011; Denaeghel *et al.*, 2011) along with certain psychological factors (Hershey *et al.*, 2007).

Hanna & Lindamood (2010) stated that some financial advice and counseling from financial advisors can lead people to plan, minimize losses in financial decision making and create wealth. Financial attitude is related to financial decision-making in terms of retirement planning. People are very careful when selecting a possible decision where they can have some profit, but when it comes to a situation of a loss, irrespective of their education they may take a risky decision (Zeng, 2013).

**H3:** *Financial Attitude (FA) has a significant positive impact on Retirement Planning (RP).*

#### **Mediating Effect**

Financial behaviour is a major determinant of financial literacy which leads to better financial attitude (Fernandes *et al.*, 2014). One study suggests financial attitude and behaviour of credit card holders are positively correlated (Chien & Devaney, 2001). Another study conducted by Batty (2015) found a positive change in financial attitude and further change in financial behaviour a year later as a result of financial education. Financial attitude, behavior and knowledge are the key dimensions of financial literacy. Attitude is a perception whereas behavior leads to action. Positive attitude may shape positive behavior towards money which may in turn affect financial planning in the long run. Therefore, the following hypothesis is developed.

**H4:** *Financial Behaviour (FB) mediates the relationship between Financial Attitude (FA) and Retirement Planning (RP).*

Financial knowledge is the knowledge of personal finance which leads to behaviour on finance-related matters (Garman & Fogue, 2006). Financial attitudes have positive relations with financial behaviours (Parrotta & Johnson, 1998). Similarly, individuals with positive financial attitudes do well with money-related matters (Joo & Grable, 2004). Therefore, the relationship between financial knowledge and its effect on attitude and retirement planning is proposed.

**H5:** *Financial Knowledge (FK) moderates the relationship between Financial Attitude (FA) and Retirement Planning (RP).*

## **RESEARCH METHODS**

### **Research Design**

This was a survey-based study where respondents were selected from the National Capital Territory (NCT) of Delhi based on convenience sampling. A self-administered questionnaire was used for the collection of responses. The questionnaire was created in English. This questionnaire was distributed to those respondents who were of at least 18 years of age. It was distributed among 1200 respondents out of which 510 questionnaires were received. Finally, 475 responses were remained for the analysis after removing incomplete responses and outliers.

### **Sample Profile**

The sample comprises 59.1 percent male and 40.9 percent females. The respondent's average age was 38.9 years with 9.7 years of standard deviation. The educational background of the respondents indicated that 11.3 percent of the respondents didn't attend any school, 4.6 percent studied till high-school (X standard), 7.7 percent studied till intermediate level (XII standard), 37 percent were educated till graduation level, 30.4 percent were educated till post-graduation level and 9 percent were Ph.D. The annual income of the majority i.e., 58.9 percent respondents was less than Rs. 1,00,000, 23.3 percent having annual

income between Rs.1,00,000 and 10,00,000, and 17.8 percent respondents having more than Rs. 10,00,000 of annual income.

The existing scales have been considered to adapt the constructs for the study from the behavioural finance literature. To measure financial attitude 7 items were used that were adapted Potrich *et al.*, (2015). The sample items include “It is important to set financial goals for the future” and “I believe the way I manage my money will affect my future”. The 7 items were used to measure financial behaviour that were adapted from Potrich *et al.*, (2015). The adapted items are “I save money for future” and “I pay my bills on time”. 6 items were used to measure retirement planning which were adapted from Kimiyaghalam *et al.*, (2017), sample items being “I invest some money in pension/provident fund” and “By the time I retire, I

will have sufficient income to ensure the standard of living I need during retirement”. The responses were collected using anchor points as 1 strongly disagree and 5 strongly agree of Likert-type question format. The adapted scales were examined for content and face validity in the context of the present study for all the constructs. The panel of respondents for examining the face and content validity comprises 10 participants, 4 professors of behavioral finance, 3 common citizens, and 3 management students.

## ANALYSIS AND RESULTS

### Normality

For the univariate and multivariate normality, skewness-kurtosis approach was used (Hair *et al.*, 2010) and the statistical values were found under the cut-off point of 3, and below 8 respectively.

**Table 1:** Assessment of Normality

	Mean	Std. Deviation	Skewness	Kurtosis
<b>FB1</b>	2.36	1.336	0.453	-1.063
<b>FB2</b>	2.32	1.238	0.750	-0.368
<b>FB3</b>	2.15	1.417	0.662	-1.220
<b>FB4</b>	2.18	1.357	0.549	-1.358
<b>FB5</b>	2.64	1.255	0.728	-0.572
<b>FA1</b>	2.56	1.538	1.061	-0.105
<b>FA2</b>	2.11	1.300	0.816	-0.579
<b>FA3</b>	2.37	1.220	0.659	-0.372
<b>FA4</b>	2.32	1.226	0.621	-0.585
<b>RP1</b>	2.65	1.155	0.893	-0.107
<b>RP2</b>	2.36	1.296	0.735	-0.449
<b>RP3</b>	2.22	1.381	0.795	-0.722
<b>RP4</b>	2.35	1.317	0.610	-0.709
<b>RP5</b>	2.49	1.293	0.583	-0.651

**Note:** Three items of FB, two items of FA and one item of RP has been removed based on standard deviation and kurtosis value.

**Source:** Author’s Calculations

### Structural Equation Modeling

The statistical inference has been drawn by using two-stage Structural Equation Modeling (SEM). It divides into two parts; in the first part, reliability and validity of the instrument have been established with measurement model and in the second part, relationship was estimated between the variables with a structural model (Schumacker & Lomax, 2010). SEM was preferred for analysis due to its capacity to deal with reflective scales, it allows the researcher to use many items to measure latent construct (Lowry & Gaskin, 2014).

### Measurement Model

Reliability, discriminant validity, and convergent validity were established by running confirmatory factor analysis using AMOS, and model fitness was assessed (Arbuckle, 2009). An initial measurement model consisting of 20 items under 3 latent constructs was tested using survey data. Some of the items (2 items of FA; 3 items of FB and 1 item of RP) were removed from the model based on their standard

deviation, kurtosis, and item reliability (Bagozzi & Yi, 1988; Dawes, 2008). The 14-items scale that demonstrated good item reliability were retained for further processing of the data. The model fit was found to be good for the scale as indicated by the following values:  $\chi^2/df$  (1.878), CFI (0.975), SRMR (0.034), RMSEA (0.043) (Gaskin, J. & Lim, J., 2016).

### Reliability and validity

The reliability and validity of the model were measured based on AVE (average variance extracted), CR (composite reliability), Cronbach's alpha. Further convergent and discriminant validity was established. Table 1 demonstrates that all three constructs have exceeded the threshold limits of 0.60, 0.70 and 0.50 (Hair *et al.*, 1998) for composite reliability, Cronbach's and AVE values respectively; it exhibited reliability and convergent validity. Discriminant validity was established based on the squared correlation of the paired constructs and the AVE of each construct. If the AVE is greater than the squared correlation, the construct exhibit discriminant validity (Hair *et al.*, 1998).

**Table 2:** Reliability and validity of the model

Construct	$\alpha$	CR	AVE	MSV	MaxR(H)	FB	FA	RP
FB	0.839	0.840	0.514	0.245	0.844	<b>0.717</b>		
FA	0.822	0.830	0.551	0.332	0.836	0.477***	<b>0.742</b>	
RP	0.833	0.834	0.502	0.332	0.835	0.495***	0.576***	<b>0.709</b>

**Note:**  $\alpha$ , Cronbach's alpha, CR, composite reliability coefficients; AVE, average variance extracted; MSV, maximum-shared variance; Significance of Correlations: \*\*\*  $p < 0.001$

**Source:** Author's calculations

### Hypothesis testing: Structural Equation Modeling

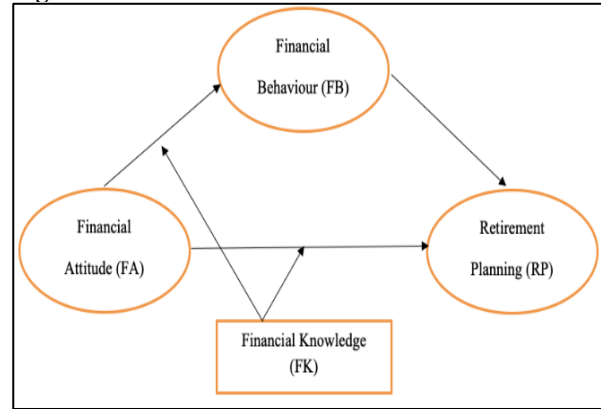
The results of the measurement model exhibited good model fit, convergent and discriminant validity. The relationship has been tested with the help of path analysis that explains the direct, mediating and moderating relationships among the proposed variables. All proposed paths were found to be significant in coefficient analysis (Figure 1). The

outcomes of the path coefficients are shown in Table 2. It is clearly visible that FA has positive impact on FB ( $\beta = 0.549$ ,  $p < 0.001$ ); FB is significantly related to RP ( $\beta = 0.296$ ,  $p < 0.001$ ), and FA has significant positive impact on RP ( $\beta = 0.497$ ,  $p < 0.001$ ), hence supporting H1, H2 and H3. Moreover, the  $R^2$  value indicates that FB and RP together explain 49.5 percent variance in RP. The  $R^2$  value of FB indicates a 30.1 percent variance in FB due to FA.

**Mediation analysis**

To test the mediating effect of FB in the relationship between FA and RP, we employed bootstrapping procedures to calculate an effect size. Further, mediation analysis has been employed. Table 4 illustrates the direct, indirect, and total effects of each construct in the model.

**Figure 1: Structural Model**



Source: Authors' Compilation

**Table 3: Path coefficients**

Path	Unstandardized path coefficients	Standardized path coefficients	Critical ratio
FB← FA	0.482	0.549	14.296***
RP← FB	0.269	0.297	7.574***
RP← FA	0.397	0.497	12.727***

Notes: \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

Source: Author's calculations

**Table 4: Path coefficients with direct, indirect and total effect**

Relationship	Direct Effect	Indirect Effect	Total Effect
FB← FA	0.549 (p = 0.001)	-	0.549
RP← FB	0.296 (p = 0.001)	-	0.497
RP← FA	0.497 (p = 0.001)	0.162 (p = 0.001)	0.659

Source: Author's calculations

The direct effect is significant, which confirms that the interaction between FA ( $\beta=0.549$ ,  $p<0.001$ ) and FB, reflects a statistically significant relationship. On a similar line FB shows ( $\beta=0.296$ ,  $p<0.001$ ) a significant relationship with RP. It also demonstrates a significant indirect relationship ( $\beta=0.162$ ,  $p<0.001$ ) between FA and RP through FB. Hence, FB acts as a partial mediator in the relation between FA and RP. This supports H<sub>4</sub>.

**Moderation analysis: A multi-group analysis**

Multi-group analysis was performed to test the moderating effects of FK on the relationship between FA and RP. Two groups were created by splitting data into high and low financial knowledge, based on the median values of FK (Byrne, 2010). The high and low financial knowledge group consisted of 182 and 293 respondents respectively. The model was tested for each group separately as suggested by Hair *et al.*

(2010), and found the fit indices to be acceptable. Byrne (2010), suggests testing group invariance, hence we tested this and compared the results of the unconstrained model with a constrained model. Results indicate a statistical significant difference in the case of high FK and low FK and demonstrate

moderated causal effect of FK on FB and RP. Further, the outcomes relating to standardized parameter estimates (Table 4) indicated that the effect of FA on FB was more pronounced in high FK ( $\beta = 0.596, p < 0.01$ ) and the effect of FB on RP in case of high FK was found significant ( $\beta = 0.736, p < 0.01$ ).

**Table 5:** Moderation test using multi-group analysis

Path	High FK $\beta$ coefficient	Low FK p-value	Standardized $\beta$ coefficient	Standardized p-value
FB← FA	0.596	0.000	0.278	0.013
RP← FB	0.736	0.000	0.240	0.010

Source: Author’s calculations

Whereas, the effect of FA on FB in case of low FK was insignificant ( $\beta = 0.278, p > 0.01$ ) and FB on RP in low FK was also significant ( $\beta = 0.240, p > 0.01$ ). Hence, it can be said that FK fully moderate the relationship between FA and RP.

**DISCUSSION AND PRACTICAL IMPLICATIONS**

Through this paper, we investigated the impact of financial attitude on financial behaviour and retirement planning and found it to have a significant impact. Prior researches have played major emphasis on financial literacy for better investment decisions. Financial literacy is defined not only in terms of financial knowledge but it also includes financial attitude and behaviour. Although knowledge about economic and personal finance is helpful but more often sound retirement planning is a result of sound financial attitude and behavior of individuals.

In our study, support for the hypothesis indicates the financial attitude and financial behaviour play an important role in explaining retirement planning. It has been found that financial attitude had a significant and positive impact on financial behaviour. A positive financial attitude inculcates saving habits among individuals and prevents them from taking unnecessary debt. Further, this attitude emphasizes creating

systematic financial behaviour among individuals. Second, financial behaviour and retirement planning are significantly and positively related. Thus, the financial attitude plays a significant role in financial behaviour which leads to fruitful retirement planning. The behaviour of an individual is always the outcome of his attitude. Therefore, retirement planning is a healthier outcome of having proper financial behaviour resulting from a financial attitude.

This study can be used for future studies and might be key points for future educational initiatives for creating training programs and financial courses.

**RESEARCH LIMITATIONS AND FUTURE DIRECTION**

The study based on primary data collection has its own limitation and is not free from biases. The sampling frame is based on a selected region and the findings could not be generalized to the entire population of the country. The study did not consider the impact of various stakeholders in driving the financial knowledge, attitude, and financial behavior of the individuals. Stakeholders like parents, family, and friends, colleagues affect the financial decision-making ability of an individual. Further studies with larger population sizes and universes can be conducted to analyse the social influence on the key dimensions



of financial literacy. A future study can also be conducted to understand the risk associated with investment decisions. Many more variables can be studied such as savings and how they can affect retirement planning.

## CONCLUSION

The study found the significant mediating effect of financial behaviour on financial attitude and planning towards retirement. Also, the moderating effect of financial knowledge on financial behaviour and retirement planning has been found. The findings of the studies contribute to the existing body of literature. Variables like financial knowledge, financial attitude, and financial behavior affect the retirement planning of an individual. Undoubtedly, there is a scope of future studies to explore the effect of financial knowledge and its relationship with financial attitude on retirement products. The study conducted in this paper can be used as a good reference for future studies related to retirement planning.

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