

**INFLUENCE OF FINANCIAL EDUCATION, KNOWLEDGE AND EXPERIENCE ON  
FINANCIAL BEHAVIOUR OF RETAIL INVESTORS: A BINARY LOGISTIC  
REGRESSION APPROACH**

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**Abstract:**

In order to have optimum control over investment outcomes, the retail investors need to have education, knowledge and experience of the multitude of saving and investment options. The purpose of this study is to analyse the influence of financial education, knowledge & experience on behaviour of retail investors towards financial securities like equity shares, mutual funds, exchange traded funds and bonds. The retail investors in Pune city are the target population and the data is collected from 394 retail investors through a structured questionnaire using snowball sampling. The binary logistic regression results shows that the investment preference towards mutual funds, equity, ETFs & bonds can be predicted from not all, but a few of the demographic factors, level of financial education, knowledge & experience. Also, the study reports that male have high and females have low preference for equity shares as well as ETFs, while male have lower and females have higher preference for bonds.

**Keywords:**

Financial Education, Financial Knowledge, Financial Experience, Financial Behaviour, Retail Investors, Logistic Regression

**1. Introduction:**

There is a consistently exponential increase in the engagement of retail investors in the securities market in India. Investment avenues such as equity, mutual funds, ETFs, PPF, real estate, pension fund, gold, bond and debenture are now easily accessible to retail investors. The rational investment decisions are an outcome of rational financial behaviour. Right financial behaviour is a consequence of financial education (Widyastuti et al., 2020) in the long term. Financial behaviour is measured based on the actions and skilfulness of people during financial transactions by application of knowledge to make superior decisions in finance (Kadoya & Khan, 2020). Financial behaviour is influenced by demographic factors such as age, gender, education, marital status, occupation, income, investment experience (Fujiki, 2020; Adil et al., 2022; Morris et al., 2022; Chen & Sun, 2023). Financial education & knowledge also influence financial behaviour (Glaser et al., (2007).

Financial experience is defined as the encounter of individuals with financial troubles (Kadoya & Khan, 2020). According to an investor survey by SEBI (2016) the mutual funds are the most preferred investment option among urban households followed by equity and bonds, which have a positive influence on the portfolio performance of individuals. A rapid increase in retail investor participation in the financial securities market in India, and importance of financial education, knowledge and experience to achieve desired outcomes, raise queries about the effect of these prerequisites on the investment preferences. The purpose of the study is to analyse the potential influence of financial education, assessed financial knowledge (AFK), perceived financial knowledge (PFK) & experience along with demographic factors on the financial behaviour of the retail investors towards marketable financial securities like equity shares, mutual funds, ETFs and bonds. The main research questions are:

**RQ1: What are the investment preferences of retail investors towards financial securities?**

**RQ2: What are the statistically significant predictors of preferences towards investment in selected marketable financial securities?**

**2. Literature Review:**

In this section, the review of selected relevant literature on influence of financial knowledge, education, experience and selected demographic variables on the financial behaviour of retail investors is presented. Morris et al. (2022) tested association of socio-demographic variables on financial behaviour of students. Alquraan et al. (2016) concluded that investment decisions do not vary across different age, gender, income & experience except education of individuals. Mushinada & Veluri (2019) found that young investors are more prone to biased financial behaviour. Kadoya & Khan (2020) reported that younger & older over middle aged people and females over male have shown a positive financial behaviour.

Financial education is a process that enhances the understanding of people about concepts of finance & financial products as well as developing skills by gathering information (Widyastuti et al., 2020). Glaser et al. (2007) examined the contribution of financial education in bettering financial behavior. Widyastuti et al. (2020) concluded that the effect of financial education on financial behaviour is insignificant. Bondia et al. (2019) found that financial experience leads to learnings and alteration in behaviour of investors which can be noticed through diversification and turnover. Widyastuti et al. (2020) reported a positive relation of financial literacy with financial behaviour. Higher financial literacy is found in individuals with higher financial education and experience (Sekita et al., 2022). Financial education and experience are significant predictors of biased financial behaviour (Mushinada & Veluri, 2019). The significance of financial knowledge is irrefutable because of its power to affect the making of financial decisions of individuals.

When defining financial knowledge, it is important to mention that too many studies have used it interchangeably with financial literacy (Glaser et al., (2007). Perceived financial knowledge is self-assessment of knowledge level about financial aspects and actual financial knowledge is the understanding of fundamental concepts of finance regardless of how these concepts are used (Ramalho & Forte, 2018; Mudzingiri et al., 2018). Financial knowledge can be acquitted through education and / or experience of financial activities. Adil et al. (2022) reported that influence of financial literacy on the investment decisions across both genders is positive & significant. Sekita et al. (2022) found that literacy about deposits, risk & debt has a higher positive influence on the balances of financial assets than literacy of insurance & inflation. Alquraan et al. (2016) mentioned that investors depend too much on their knowledge when they make investment decisions.

Thus, the Literature has much evidence to acknowledge the importance of financial education, knowledge & experience among the retail investors. Gangwar & Singh, (2017) found mutual funds as the second most preferred choice of investment after bank savings. But physical assets form a huge portion of wealth among households in India (RBI, 2017). The shift in the preference of investors due to changes in demography, social & economic factors has made it difficult to understand & serve the needs of the investors (Sahi & Arora, 2012). Hence, to find the answer to the research question RQ2 the following hypothesis proposed:

**Ho: The investment preferences towards marketable financial securities are not predicted by demographics, financial education, knowledge & experience of retail investors.**

### 3. Research Methodology:

Data is collected from 394 retail investors selected through snowball (non-random) sampling technique from Pune City using a structured questionnaire. Various studies laid the foundation for measurement of AFK & PFK (Kadoya & Khan, 2020; Fujiki, 2020; Lind, 2020; Morris et al. 2022). The PFK is measured through three questions on self-assessment knowledge of retail investors about basic financial concepts and principles, common money management practices & lingo / slang of financial experts & advisers as compared to people they know, on a five-point Likert scale. Also, the AFK is measured through ten questions on interest calculation, effect of inflation, risk-return, diversification, basics of financial products such as home loan, credit card, mutual fund & stocks, where '1' for correct & '0' for wrong answer. The studies which laid the foundation for the measure of financial education are Widyastuti et al., (2020), Mushinada & Veluri (2019), Glaser et al. (2007), Chen & Sun, (2023). Investment experience is observed through an open-ended question on the number of years of saving & investment experience (Sahi & Arora, 2012). Financial behaviour is measured through the

preference towards investment options (Sahi & Arora, 2012; SEBI, 2016; RBI, 2017; Gangwar & Singh, 2017), where 1 being most preferred and 10 being least preferred option. Statistical methods used are Cronbach's Alpha to check reliability of constructs of latent variables. Followed by binary Logistic Regression is applied to test whether the selected demographic factors, level of financial education, knowledge & experience can predict the investment preference towards financial securities. For this purpose, the preference for financial securities are transformed to binary variables. The rank 6 to 10 indicate low preference is coded as '0' and rank 1 to 5 indicate higher preference is coded as '1'.

#### 4. Data Analysis:

Sample consists of 65.7% male & 34.3% female. The majority are 31 to 40 years of age, post graduates, married & private sector employees. While 54.82% have up to 5 years of investment experience, 22.34% have 5 to 10 years and 22.84% have above 10 years of experience. An 18.78% investor has no formal financial education, while 34.77% have elementary education, 28.93% have intermediate and only 17.51% have advanced financial education. It is found that 24.37% investors have up to 5 years of investment experience with elementary financial education, indicating that the majority of investors are novice. For AFK & PFK, the Cronbach's Alpha is 0.737 and 0.870 (> 0.70) respectively with high positive inter-item correlation among the items of scale, indicating the reliability of scale. Majority of investors have average to high AFK and PFK, while only 9.39% and 16.75% investors have low levels of PFK and AFK respectively.

#### RQ1: What are the investment preferences of retail investors towards financial securities?

The current preference of retail investors is presented in table 1, indicating mutual funds are a highly preferred investment option followed by equity shares, saving schemes, real estate and pension schemes. While, investors have low preference for ETFs, precious metals / stones, term deposits, bonds and artwork / antiques.

Table 1: Investment Preferences of Retail Investors		
Investment Options Details	Mean Preference	Rank
1. Mutual Funds (including ELSS, ULIP, REIT, etc)	2.78	1
2. Equity Shares (Stock Exchange Listed Stocks)	3.16	2
3. Saving Schemes (PPF / NSC / KVP, etc)	4.09	3
4. Real Estate (Commercial / Residential)	4.13	4
5. Pension Scheme / Annuity Plans (Including NPS)	4.20	5
6. Exchange Traded Funds (ETFs)	4.40	6
7. Precious Metals / Stones (Gold, Silver, Diamond, etc)	4.54	7
8. Term / Fixed Deposits (Bank / Post Office / Company)	4.57	8
9. Bonds / Debentures (Government / Corporate)	5.09	9
10. Artwork / Antiques (Paintings, Coins, etc)	6.98	10
Source: Primary Data		

#### RQ2: What are the statistically significant predictors of investment preferences towards selected marketable financial securities?

##### Ho1: The investment preferences towards marketable financial securities can not be predicted by selected independent variables.

Binary Logistic Regression is applied to test hypothesis Ho1 and ascertain the predictability of investment preference. The regressions are run on IBM SPSS 26, using the forward stepwise (likelihood ratio) method, where statistically insignificant variables with p-value (> 0.05) are automatically removed.

**Ho1.1: Investor Preference for Mutual Funds cannot be predicted by selected factors:** The variables in the equation are shown in Table 2, the Omnibus Test result at step 3 is statistically significant with chi-square (31.663) & p-value 0.000 (< 0.05). The model explains 15.3% variance (Nagelkerke R Square). Hosmer and Lemeshow Test, p-value is 0.068 (> 0.05), indicates that model

fits well to data and correctly classified the 88.80% cases. Hence, hypothesis Ho1.1 is rejected. This shows that retail investors with a lower investment experience & AFK but higher financial education have a higher preference for mutual funds.

Table 2: Variables in the Equation - Preference for Mutual funds

	Independent Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Step 3a	Investment Experience	-0.515	0.199	6.659	1	0.01	0.598
	Financial Education	0.843	0.195	18.747	1	0	2.323
	AFK	-0.164	0.077	4.586	1	0.032	0.848
	Constant	3.062	0.592	26.76	1	0	21.369

Source: Primary Data

**Ho1.2: Investor Preference for Equity Share cannot be predicted by selected factors:** The variables in the equation are shown in Table 3, the Omnibus Test result at step 4 is statistically significant with chi-square (65.494) & p-value 0.000 (< 0.05). The model explains 26% variance (Nagelkerke R Square). Hosmer and Lemeshow Test, p-value is 0.338 (> 0.05), indicates that model fits well to data and correctly classified the 84.3% cases. Hence, hypothesis Ho1.2 is rejected. It indicates that male have high and females have low preference for equity share investments. Retail investors with higher financial education & PFK, but with low investment experience have higher preference for equity shares as investment options.

Table 3: Variables in the Equation - Preference for Equity Shares

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 4a	Gender (Male)	1.209	0.316	14.67	1	0	3.35
	Investment Experience	-0.899	0.193	21.684	1	0	0.407
	Financial Education	0.478	0.176	7.374	1	0.007	1.612
	PFK	0.231	0.066	12.194	1	0	1.26
	Constant	-0.008	0.539	0	1	0.988	0.992

Source: Primary Data

**Ho1.3: Investor Preference for ETFs cannot be predicted by selected factors:** The variables in the equation are shown in Table 4, the Omnibus Test result at step 4 is statistically significant with chi-square (74.424) & p-value 0.000 (< 0.05). The model explains 25% variance (Nagelkerke R Square). Hosmer and Lemeshow Test, p-value is 0.444 (> 0.05), indicates that model fits well to data and correctly classified the 78.4% cases. Hence, hypothesis Ho1.3 is rejected. It indicates that male have high and females have low preference for ETFs investments. Investors with higher financial education but low investment experience have higher preference for ETFs. AFK has a weak negative influence on preference for an ETF as an investment option.

Table 4: Variables in the Equation - Preference for ETFs

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 4a	Gender (Male)	0.609	0.267	5.196	1	0.023	1.838
	Investment Experience	-0.422	0.156	7.308	1	0.007	0.655
	Financial Education	1.041	0.156	44.742	1	0	2.833
	AFK	-0.212	0.058	13.152	1	0	0.809
	Constant	1.349	0.433	9.694	1	0.002	3.854

Source: Primary Data

**Ho1.4 Investor Preference for Bonds cannot be predicted by selected factors:** The variables in the equation are shown in Table 5, the Omnibus Test result at step 3 is statistically significant with chi-square (45.491) & p-value 0.000 (< 0.05). The model explains 14.7% variance (Nagelkerke R Square).



Hosmer and Lemeshow Test, p-value is 0.304 ( $> 0.05$ ), indicates that model fits well to data and correctly classified the 65% cases. Hence, hypothesis Ho1.4 is rejected. It indicates that male have lower and females have higher preference for bonds. Level of academic qualification has a positive & investment experience has a negative influence on preference for bonds.

Table 5: Variables in the Equation - Preference for Bonds

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 3a	Gender (Male)	-0.815	0.236	11.902	1	0.001	0.442
	Academic Qualification	0.526	0.126	17.466	1	0	1.692
	Investment Experience	-0.578	0.139	17.394	1	0	0.561
	Constant	0.567	0.379	2.238	1	0.135	1.763

Source: Primary Data

### 5. Conclusions:

The demographic spread of investors is discussed first to provide appropriate perspectives to the findings for the study. The greater part of responding investors is of the age 31 to 40 years, post graduates, married & private sector employees. The Proportion of male investors is quite higher than female investors. A major percentage of investors have an elementary or intermediate level of financial education and have only up to 5 years of investment experience. Almost all the investors use only their own savings for investments. Investors have shown the highest investment preference towards mutual funds followed by equity shares, saving schemes, real estate and pension schemes whereas low preference towards ETFs, precious metals / stones, term deposits, bonds and artwork / antiques being least preferred investment options among retail investors. Literature has mixed results, Kumar & Bansal (2014) reported gold as the most preferred investment option and a low preference for Mutual fund, equity and bonds among individuals, while SEBI (2016) reported that mutual funds are the most preferred investment option followed by equity and bonds. Binary logistic regression is conducted, the hypothesis is rejected, establishing that the investment preference towards mutual funds, equity, ETFs & bonds can be predicted from financial education, knowledge & experience along with selected demographic factors. Hence, the study provides important dimensions of financial education, knowledge & experience as predictors of preference for financial securities. This could help financial service providers to identify potential investors and define their marketing strategy. This would help better asset allocation as per investor profile and investment intention leading to investor wellbeing.

### 7. Limitations:

The scope of study is confined to investors from Pune city selected through non-random sampling. Also, the level of education, knowledge and experience change over time with life stages and economic conditions. Hence, the results cannot be generalized and used for policy formation by investors and institutions.

### 8. Future Research Possibilities:

A large-scale study at national level can be conducted in collaboration with financial institutions, advisers or brokers to get big data and the analysis could be used for investor profiling for better advisory. The study can help regulators and financial institutions to design innovative financial educations and knowledge enhancement programs for better investor experiences and decision making.

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