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"COMPARATIVE ANALYSIS OF DETERMINANTS INFLUENCING ETF INVESTMENT INTENTION AMONG INDIAN RETAIL INVESTORS: A PLS-SEM MULTI-GROUP AND IPMA APPROACH"

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Abstract

This study examines whether the structural relationships underlying retail investors' intention to invest in Exchange Traded Funds (ETFs) differ between male and female investors in India. A cross-sectional survey of 507 retail investors was analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The proposed framework brings together financial advertisement antecedents, behavioural determinants and financial literacy determinants. Measurement and structural models were assessed for the full sample and separately for male and female respondents. The model explained 79.2% of the variance in Investor Intention for the complete sample and 80.2% for each gender group. The corresponding Q^2 Predict values were 0.775, 0.763 and 0.783. Bootstrapped PLS-MGA and the Welch–Satterthwaite procedure were subsequently used to determine whether the observed group differences were statistically meaningful. Of the fifteen structural relationships examined, only the path from Herding Behaviour to Investor Intention differed significantly between males and females. For male respondents, the relationship was negative and non-significant ($\beta = -0.018$), whereas for female respondents it was positive and significant ($\beta = 0.173$); the between-group difference was -0.191 ($p < 0.001$). The remaining paths did not exhibit statistically significant gender differences. IPMA further indicated that Informative Influence and Attitude occupied prominent positions across the analyses, while Perceived Risk showed a negative importance value. Overall, the evidence indicates that gender-related variation should be examined at the level of individual structural relationships rather than inferred from differences in within-group significance.

Keywords: Exchange Traded Funds; Investor Intention; Gender Differences; Multi-Group Analysis; IPMA.

JEL Classification: G11, G23, G41

1. Introduction

Exchange Traded Funds have developed into an important investment vehicle because they combine portfolio diversification with the tradability associated with exchange-listed securities. Their transparency, liquidity, diversification potential and comparatively low costs have contributed to their growing relevance in contemporary investment markets (Madhavan,



2016; Ben-David et al., 2017). Nevertheless, ETF participation cannot be explained solely by product characteristics such as expected return and risk. Investors also interpret financial information through psychological, social and informational lenses, which can shape their willingness to consider and select investment alternatives (Barberis & Thaler, 2003; Baker & Nofsinger, 2010).

The Indian investment environment has simultaneously experienced greater retail participation and wider access to digital investment platforms. The SEBI Investor Survey 2025 highlights investor awareness, information access, digital participation and investor education as relevant dimensions of participation in the securities market (SEBI, 2026). Investors increasingly encounter investment-related information through digital channels and social media, which can influence how alternatives are searched for, interpreted and evaluated (Sahi, 2017; Loos et al., 2020). The ability to distinguish useful information from incomplete or misleading information is therefore increasingly relevant to retail investors.

Financial literacy forms another important component of investment decision-making. It encompasses the knowledge and skills required to understand financial products and make informed financial choices (Huston, 2010; Atkinson & Messy, 2012). Evidence from Indian investors indicates an association between financial literacy and investment behaviour, including the way behavioural biases may affect investment decisions (Venkatesa Palanichamy et al., 2024; Gupta et al., 2025). Recent work also suggests that financial awareness and financial literacy can interact with behavioural characteristics in explaining investment decisions (Sanyal et al., 2026). These observations support examining investor capability alongside psychological and behavioural influences rather than treating them as separate explanations.

Behavioural finance provides a complementary perspective by recognising that investment decisions may be affected by attitudes, perceived control, social expectations, risk perceptions, herding tendencies and related behavioural mechanisms (Ajzen, 1991; Kahneman & Tversky, 1979; Shefrin & Statman, 2000). Recent evidence involving Indian retail investors continues to emphasise the relevance of behavioural factors in financial decision-making (Mamidala et al., 2024; Dutta & Das, 2025). These considerations are particularly pertinent to ETFs because investors must evaluate product characteristics, risk, usefulness and available information before forming an investment intention. Financial advertising and digital information can therefore act as informational cues, while investors' behavioural characteristics and financial capabilities influence how those cues are interpreted.

An additional issue concerns whether the relationships among these determinants remain comparable across investor groups. Investors differ in financial knowledge, prior experience, risk preferences and behavioural tendencies (Barber & Odean, 2001; Croson & Gneezy, 2009). Gender has received particular attention in the investment literature because previous studies have documented differences in financial behaviour and risk preferences between male and female investors (Almenberg & Dreber, 2015; Filippin & Crosetto, 2016). Recent Indian evidence has likewise reported gender-related variation in behavioural biases among



individual investors (Patra & Mohapatra, 2025). However, such differences need not occur uniformly across every structural relationship.

This distinction is important when applying Multi-Group Analysis. PLS-MGA permits direct comparison of structural relationships across predefined groups and tests whether differences between group-specific path coefficients are statistically significant (Sarstedt et al., 2017; Hair et al., 2022). Although this approach is increasingly used to study heterogeneity in investment behaviour, relatively limited evidence has examined ETF investment intention through an integrated framework that simultaneously incorporates financial advertisement, behavioural and financial literacy determinants.

Path comparison alone also does not indicate the relative importance or performance of the determinants. Importance–Performance Map Analysis complements the structural assessment by considering the importance of a construct in explaining the target variable together with its performance level (Ringle & Sarstedt, 2016). Recent methodological developments have further strengthened the use of IPMA within PLS-SEM by jointly considering importance and performance when interpreting the determinants of a target construct (Sarstedt et al., 2024; Hauff et al., 2024).

Against this background, the present study integrates financial advertisement antecedents, behavioural determinants and financial literacy determinants within a single framework and examines whether their relationships with ETF Investor Intention differ between male and female retail investors. IPMA is additionally employed within the respective groups to provide evidence on relative importance and performance. The analysis does not presume the existence of gender differences; rather, group differences are evaluated statistically.

The study addresses three research questions: (1) whether gender differences exist in the structural relationships between the proposed determinants and ETF Investor Intention; (2) which determinants are comparatively important within the respective models; and (3) whether PLS-MGA and IPMA provide complementary evidence concerning the determinants of ETF investment intention.

The contribution of the study is threefold. First, it brings financial advertisement antecedents, behavioural variables and financial literacy determinants together in an integrated ETF investment-intention framework. Second, it extends the analysis from the aggregate investor sample to gender-specific structural comparisons. Third, it combines PLS-MGA with IPMA so that between-group differences can be considered alongside the relative importance and performance of the determinants.

2. Literature Review

2.1 Investor Intention and Behavioural Determinants

Investor intention represents an individual's readiness or willingness to undertake an investment action. Investment-intention research increasingly recognises that such readiness can emerge from the interaction of cognitive evaluations, psychological characteristics and social influences. Recent evidence identifies attitude, subjective norms, perceived behavioural control and financial capability as relevant components of investment intention (Thanki et al., 2025).



Within the present study, Attitude reflects an investor's overall evaluation of ETFs. A favourable assessment of the suitability of ETFs for personal investment objectives can strengthen the intention to invest (Sharma & Goel, 2025). Herding Behaviour captures the tendency to consider or imitate the actions of other investors and may consequently shape investment decisions (Annapurna & Basri, 2024).

Perceived Behavioural Control concerns the investor's perception of having the resources and ability required to undertake an investment decision, whereas Self-Efficacy reflects confidence in successfully performing financial activities. Higher self-efficacy may encourage participation in investment activities (Singh et al., 2025). Perceived Risk represents uncertainty and the possibility of financial loss and can therefore influence investment choices and intention (Thrishul & Venkatesh, 2025).

Perceived Usefulness refers to the extent to which an investor regards ETFs or related investment information as useful for achieving financial objectives. Saving Habit captures a person's tendency to save and allocate resources towards future needs. Social Media Influence represents the effect of investment-related information, opinions and interactions encountered through social-media platforms (Mishra et al., 2023). Subjective Norms concern perceived expectations from relevant social groups, including family, friends and other people whose opinions may be relevant to investment choices. Taken together, these constructs capture individual evaluation, perceived capability, risk assessment, behavioural tendencies and social influences associated with ETF investment intention.

2.2 Financial Advertisement Antecedents

Financial advertisements communicate information about investment products, their characteristics and associated risks. Such communication is more likely to influence investors when the information is perceived as useful, trustworthy and accurate. Informative Influence therefore captures the extent to which advertising provides useful information that helps investors understand ETFs and reduces uncertainty.

Credibility concerns the perceived reliability and trustworthiness of financial communication. Investors commonly depend on external information when evaluating investment alternatives, making confidence in the information source an important consideration (Lenta & Kumar, 2026). Truthfulness refers to whether investment-related communication is perceived as accurate, transparent and dependable. Collectively, Informative Influence, Credibility and Truthfulness represent the principal financial advertisement antecedents examined in the study.

2.3 Financial Literacy Determinants

Financial literacy is considered in this study through Financial Awareness, Financial Skills and Financial Experience. Financial Awareness denotes an investor's understanding of investment products, opportunities and associated risks. Greater awareness can improve comprehension of alternatives and support investment decision-making (Reddy et al., 2025).

Financial Skills refer to the practical application of financial knowledge when evaluating alternatives and making financial choices. Financial Experience reflects knowledge developed through prior involvement with financial products and investment activities. Such



experience may strengthen an investor's ability to interpret financial information and assess investment opportunities (Uma & Maheswari, 2025). Financial literacy is not treated as independent of behavioural influences; investors may possess financial knowledge while simultaneously being affected by attitudes, social pressures and perceptions of risk.

3. Synthesis and Research Gap

The reviewed literature points to three broad observations. First, investment-intention research has moved beyond strictly rational explanations and increasingly incorporates financial information, behavioural influences and financial literacy (Shroff et al., 2025). Second, variables such as attitude, perceived behavioural control, herding, perceived risk, self-efficacy and social influence continue to feature prominently in investment research, while digital information channels have become increasingly relevant to financial decision-making (Chandani et al., 2025; Alam & Sarkar, 2026). Third, comparatively limited evidence explains whether these relationships remain stable across investor groups in the context of ETF investment, particularly within the Indian retail-investor setting.

The present study responds to this gap by combining financial advertisement antecedents, behavioural determinants and financial literacy determinants within one explanatory framework. It then moves from an aggregate assessment to a direct comparison of male and female investor groups. The study applies MICOM before group comparison and uses PLS-MGA together with the Welch–Satterthwaite procedure to distinguish genuine between-group differences from differences that merely appear because the within-group paths have different levels of statistical significance. Finally, IPMA is used to supplement the structural comparison with information concerning determinant importance and performance.

4. Theoretical Foundation

The conceptual framework draws on two complementary perspectives: the Extended Theory of Planned Behaviour (E-TPB) and the Stimulus–Organism–Response (S–O–R) model. Their combined use permits the study to connect external financial information with internal investor characteristics and the resulting intention to invest in ETFs.

The Theory of Planned Behaviour proposes that attitude, subjective norms and perceived behavioural control contribute to behavioural intention (Ajzen, 1991). In the present context, these dimensions correspond to investors' evaluations of ETFs, perceived social expectations and perceived ability to undertake ETF investments. The framework is extended with Perceived Usefulness, Perceived Risk, Self-Efficacy, Social Media Influence and Saving Habit to capture additional behavioural influences relevant to investment decisions in a digitally mediated financial environment.

The S–O–R perspective provides the environmental component of the framework (Mehrabian & Russell, 1974). Financial advertisement antecedents—Informative Influence, Credibility and Truthfulness—represent external stimuli. These stimuli can be processed through investors' behavioural and financial characteristics, which constitute the organismic component. Investor Intention towards ETFs is treated as the resulting response.

The two perspectives are therefore complementary. E-TPB explains how individual evaluations, social expectations and perceived control contribute to intention, whereas S–O–R explains how information originating in the external environment can enter the decision process. Financial literacy adds a capability dimension through Financial Awareness, Financial Skills and Financial Experience. The multi-group design then examines whether the structural relationships are comparable for male and female investors.

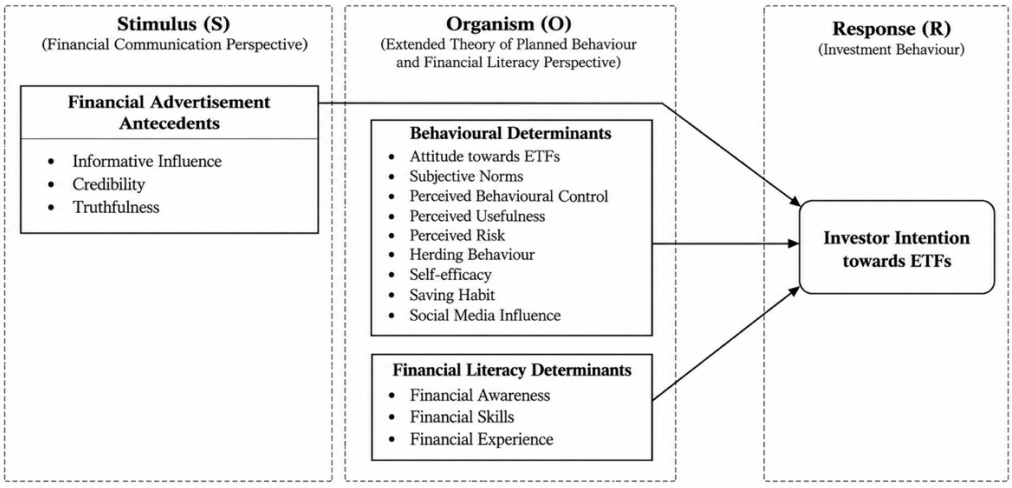


Figure 4.1 : Integration of E-TPB and SOR Model

5. Research Design And Sample

The empirical investigation follows a cross-sectional survey design. Data were obtained from 507 retail investors in India. For the gender comparison, respondents were classified into male and female groups. The model includes fifteen exogenous constructs—Attitude, Credibility, Financial Awareness, Financial Experience, Financial Skill, Herding Behaviour, Informative Influence, Perceived Behavioural Control, Perceived Risk, Perceived Usefulness, Saving Habit, Self-Efficacy, Social Media Influence, Subjective Norms and Truthfulness—with Investor Intention specified as the endogenous construct.

The measurement model was assessed using indicator loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), HTMT and the Fornell–Larcker criterion. The structural assessment considered path coefficients, bootstrapped t-values, p-values, confidence intervals, R^2, f^2 and Q^2 Predict. Gender comparisons were preceded by the MICOM procedure and subsequently examined through PLS-MGA and the Welch–Satterthwaite test.

6. Measurement Model Assessment

The measurement assessment considered reliability, convergent validity and discriminant validity. Indicator reliability was examined through standardised outer loadings, while internal consistency was evaluated using Cronbach's alpha and composite reliability.



Convergent validity was assessed through AVE, and discriminant validity was examined using HTMT and the Fornell–Larcker criterion. The reported results satisfy the measurement requirements used in the study.

Before conducting the gender comparison, measurement invariance was assessed using MICOM. The analysis did not establish full compositional invariance for every construct. In particular, Credibility (permutation p = 0.039) and Financial Experience (permutation p = 0.023) did not satisfy the compositional-invariance criterion. Consequently, the study proceeded with PLS-MGA and the Welch–Satterthwaite test rather than interpreting group-specific significance tests as evidence of between-group differences.

7. Structural Model and IPMA

Path Coefficients (β), t-values, p-values, R^2, f^2 and Q^2 Predict were used to evaluate the structural model. The total-effect importance and latent-variable performance of each determinant was then evaluated for the overall model as well as for the male and female models using IPMA. IPMA is considered as a priority interpretation instead of a significance test.

Table 7.1: Coefficient of Determination and Predictive Relevance

Endogenous Construct	Overall R^2	Male R^2	Female R^2	Overall Q^2	Male Q^2	Female Q^2
Investor Intention	0.792	0.802	0.802	0.775	0.763	0.783

The structural model demonstrated substantial explanatory power. Investor Intention recorded an R^2 of 0.792 in the overall sample and 0.802 in both the male and female models. The Q^2 Predict values were 0.775, 0.763 and 0.783 for the overall, male and female models, respectively. These results indicate that the proposed determinants jointly account for a substantial proportion of variation in Investor Intention and that the models possess predictive relevance.

7.2 Assessment of Effect Size (f^2)

Table 7.2 showing Effect Size (f^2) of Predictor Constructs on Investor Intention: Overall, Male and Female Models

Predictor Construct	Overall (f^2)	Male (f^2)	Female (f^2)	Overall Assessment
Attitude	0.111	0.150	0.095	Small Effect
Credibility	0.016	0.024	0.015	Small Effect
Financial Awareness	0.036	0.014	0.059	Small Effect
Financial Experience	0.035	0.020	0.044	Small Effect
Financial Skill	0.010	0.028	0.005	Negligible Effect
Herding Behaviour	0.043	0.001	0.121	Small Effect
Informative Influence	0.130	0.168	0.105	Small Effect
Perceived Behavioural Control	0.066	0.103	0.050	Small Effect
Perceived Risk	0.017	0.002	0.030	Small Effect
Perceived Usefulness	0.039	0.044	0.039	Small Effect



Saving Habit	0.009	0.007	0.006	Negligible Effect
Self-Efficacy	0.024	0.009	0.052	Small Effect
Social Media Influence	0.055	0.052	0.061	Small Effect
Subjective Norms	0.016	0.026	0.010	Small Effect
Truthfulness	0.074	0.113	0.050	Small Effect

The effect-size results indicate that none of the predictor constructs reached the large-effect threshold. In the overall model, Informative Influence had the largest reported f^2 (0.130), followed by Attitude (0.111), Truthfulness (0.074) and Perceived Behavioural Control (0.066). Financial Skill (0.010) and Saving Habit (0.009) showed negligible effects. The gender-specific results show some variation in effect magnitude, but these values should be interpreted alongside the formal between-group tests rather than as evidence of gender differences by themselves.

7.3 Importance–Performance Map Analysis (IPMA): Overall Model

Table 7.3: Importance–Performance Map Analysis (IPMA) Results for Investor Intention: Overall Model

Construct	Importance	Performance	Priority Ranking
Informative Influence	0.204	47.053	1
Attitude	0.192	44.008	2
Truthfulness	0.150	42.600	3
Perceived Behavioural Control	0.143	42.487	4
Social Media Influence	0.120	54.535	5
Herding Behaviour	0.107	51.232	6
Perceived Usefulness	0.099	53.676	7
Financial Awareness	0.095	45.801	8
Financial Experience	0.093	54.513	9
Self-Efficacy	0.080	44.097	10
Credibility	0.066	51.438	11
Subjective Norms	0.061	49.854	12
Financial Skill	0.050	49.236	13
Saving Habit	0.044	47.298	14
Perceived Risk	-0.067	55.354	15

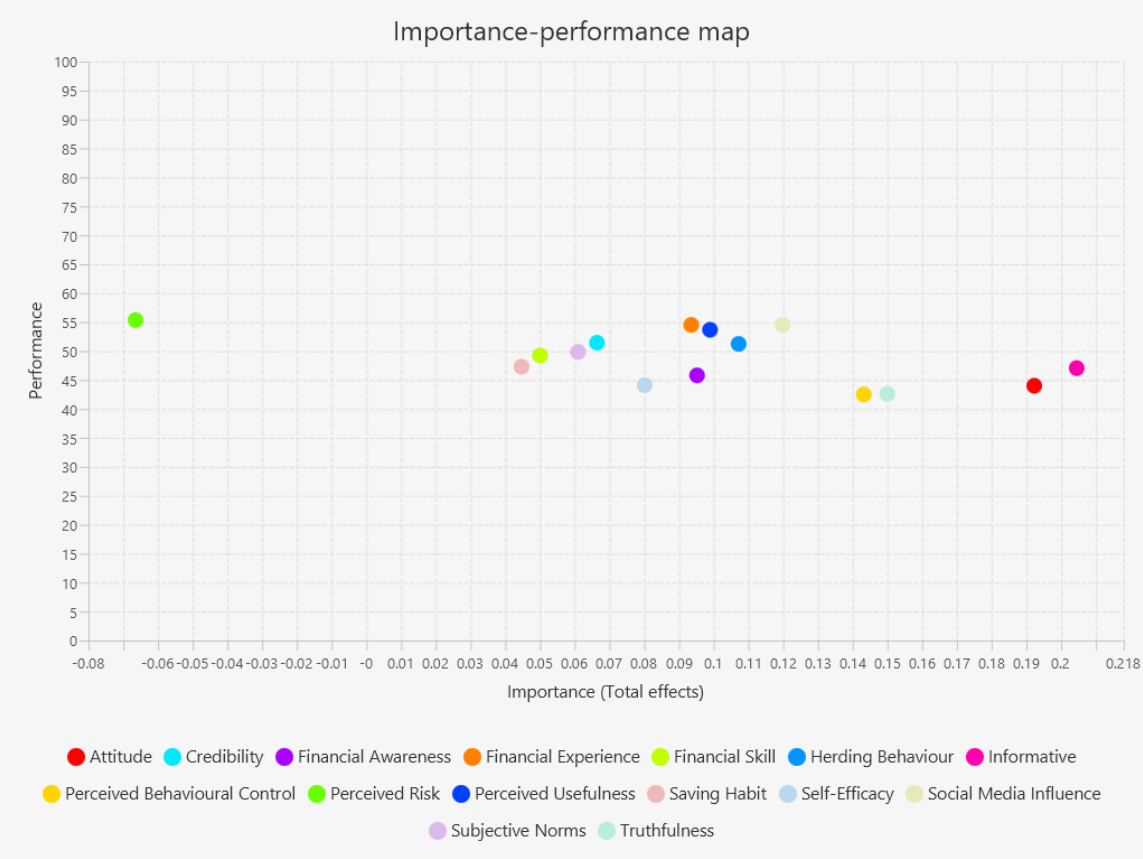


Figure 7.3: Importance–Performance Map Showing the Relative Importance and Performance of Predictor Constructs on Investor Intention (Overall Sample)

The overall IPMA placed Informative Influence at an importance value of 0.204 and Attitude at 0.192. Truthfulness and Perceived Behavioural Control followed with importance values of 0.150 and 0.143. Social Media Influence and Financial Experience showed comparatively strong performance despite lower relative importance. Perceived Risk produced a negative importance value of −0.067, indicating an inverse contribution to Investor Intention in the IPMA results. These findings provide a complementary perspective to the path estimates by showing how importance and performance combine in the interpretation of the determinants.

7.4 Structural Model Assessment and Multi-Group Analysis (Gender-Based Comparison)

After assessing the measurement model, the structural model was then assessed in a separate analysis for the overall sample, male and female sample respectively by bootstrapping used in SmartPLS to examine the hypothesised relationships with Investor Intention under the basis of β, t-value, p-value, standard deviation and 95% confidence interval. Measurement Invariance of Composite Models (MICOM) was assessed to explore gender-based differences, as full compositional invariance could not be achieved for all constructs, a Multi-Group Analysis (MGA) was also performed, as well as Bootstrap MGA and the Welch–Satterthwaite test to compare path coefficients between male and female respondents. The



results show the importance and relative effect of the predictors of Investor Intention for the total group and for the gender sub groups.

7.5 Structural Model Assessment – Overall Sample

The structural model was then tested using SmartPLS software to test the hypothesized relationships between the predictor constructs and Investor Intention, after the measurement model was determined to be reliable and valid. The significance of path coefficients (β), t-values, p-values, standard errors and confidence intervals was tested by the method of bootstrapping. The findings reveal the importance and direction of the hypothesized relationships that affect investors' intentions to invest in ETFs.

Table 7.5: Structural Model Results for the Overall Sample

Path	β (Beta)	SD	t-value	p-value	95% Confidence Interval	Supported
Attitude → Investor Intention	0.192	0.029	6.712	0.00	[0.136, 0.248]	Yes
Credibility → Investor Intention	0.066	0.023	2.830	0.01	[0.020, 0.111]	Yes
Financial Awareness → Investor Intention	0.095	0.020	4.790	0.00	[0.055, 0.134]	Yes
Financial Experience → Investor Intention	0.093	0.023	4.120	0.00	[0.050, 0.138]	Yes
Financial Skill → Investor Intention	0.050	0.023	2.128	0.03	[0.005, 0.095]	Yes
Herding Behaviour → Investor Intention	0.107	0.024	4.442	0.00	[0.061, 0.155]	Yes
Informative Influence → Investor Intention	0.204	0.027	7.657	0.00	[0.152, 0.255]	Yes
Perceived Behavioural Control → Investor Intention	0.143	0.027	5.383	0.00	[0.092, 0.195]	Yes
Perceived Risk → Investor Intention	-0.067	0.025	2.699	0.01	[-0.115, -0.019]	Yes
Perceived Usefulness → Investor Intention	0.099	0.022	4.455	0.00	[0.054, 0.142]	Yes
Saving Habit → Investor Intention	0.044	0.020	2.230	0.03	[0.006, 0.084]	Yes
Self-Efficacy → Investor Intention	0.080	0.022	3.669	0.00	[0.038, 0.124]	Yes
Social Media Influence → Investor Intention	0.120	0.023	5.158	0.00	[0.075, 0.164]	Yes
Subjective Norms → Investor Intention	0.061	0.021	2.895	0.00	[0.019, 0.101]	Yes
Truthfulness → Investor Intention	0.150	0.027	5.641	0.00	[0.096, 0.200]	Yes

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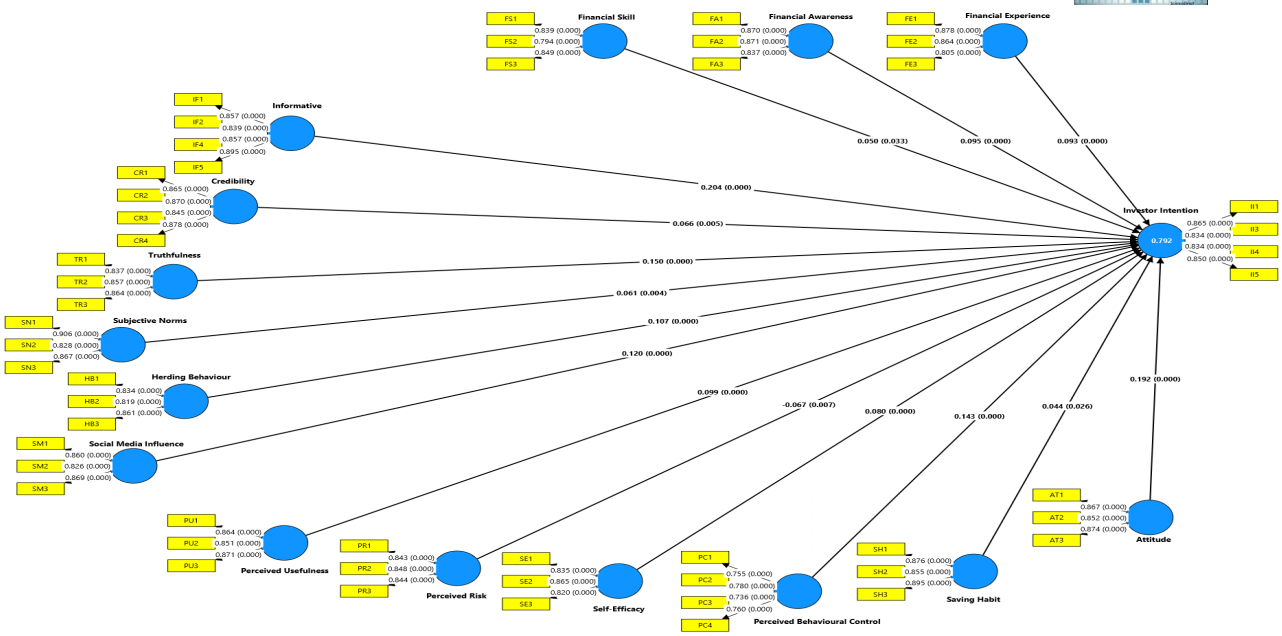


Figure 7.5: Structural Model Showing the Determinants of Investor Intention (Overall Sample)

Bootstrapping results for the complete sample indicate that all fifteen proposed relationships with Investor Intention were statistically significant. Informative Influence recorded the largest positive coefficient ($\beta = 0.204$, $t = 7.657$, $p < 0.001$), followed by Attitude ($\beta = 0.192$, $t = 6.712$, $p < 0.001$). Truthfulness ($\beta = 0.150$) and Perceived Behavioural Control ($\beta = 0.143$) were also positive and statistically significant.

Positive relationships were additionally observed for Social Media Influence ($\beta = 0.120$), Herding Behaviour ($\beta = 0.107$), Perceived Usefulness ($\beta = 0.099$), Financial Awareness ($\beta = 0.095$), Financial Experience ($\beta = 0.093$), Self-Efficacy ($\beta = 0.080$), Credibility ($\beta = 0.066$), Subjective Norms ($\beta = 0.061$), Financial Skill ($\beta = 0.050$) and Saving Habit ($\beta = 0.044$). Perceived Risk differed in direction, with a statistically significant negative coefficient of $\beta = -0.067$ ($t = 2.699$, $p = 0.007$). Thus, the complete model provides evidence that informational, behavioural and financial-literacy variables jointly contribute to ETF Investor Intention.

7.6 Comparative Structural Model Results: Overall, Male and Female Respondents

7.6 Table Showing Comparative Structural Model Results: Overall, Male and Female Respondents

Path	Overal	Overal	Overal	Overal	Male β	Male t	Male p	Male	Femal	Femal	Femal	Femal

Social Media Influence → Investor	Self-Efficacy → Investor Intention	Saving Habit → Investor Intention	Perceived Usefulness → Investor	Perceived Risk → Investor Intention	Perceived Behavioural Control →	Informative Influence → Investor	Herding Behaviour → Investor	Financial Skill → Investor Intention	Financial Experience → Investor	Financial Awareness → Investor	Credibility → Investor Intention	Attitude → Investor Intention
0.120	0.080	0.044	0.099	-0.067	0.143	0.204	0.107	0.050	0.093	0.095	0.066	0.192
5.158	3.669	2.230	4.455	2.699	5.383	7.657	4.442	2.128	4.120	4.790	2.830	6.712
0.000	0.000	0.026	0.000	0.007	0.000	0.000	0.000	0.033	0.000	0.000	0.005	0.000
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
0.118	0.049	0.041	0.107	-0.022	0.172	0.226	-0.018	0.084	0.071	0.059	0.082	0.226
2.896	1.385	1.094	2.619	0.560	3.983	5.367	0.453	2.096	2.029	1.754	2.174	5.139
0.004	0.166	0.274	0.009	0.576	0.000	0.000	0.651	0.036	0.042	0.080	0.030	0.000
Yes	No	No	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
0.121	0.117	0.034	0.093	-0.087	0.126	0.179	0.173	0.033	0.102	0.116	0.064	0.175
3.255	3.245	0.937	2.549	2.404	3.552	4.869	4.311	0.904	2.965	3.381	2.069	4.145
0.001	0.001	0.349	0.011	0.016	0.000	0.000	0.000	0.366	0.003	0.001	0.039	0.000
Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes



Subjective Norms → Investor Intentio	0.061	2.895	0.004	Yes	0.081	2.343	0.019	Yes	0.048	1.977	0.048	Yes
Truthfulness → Investor Intention	0.150	5.641	0.000	Yes	0.188	4.408	0.000	Yes	0.118	3.117	0.002	Yes

The group-specific structural estimates show that several relationships are statistically significant in both gender groups. Informative Influence remains positive for males (β = 0.226) and females (β = 0.179), while Attitude is also positive in both groups (β = 0.226 for males and β = 0.175 for females). Credibility, Financial Experience, Informative Influence, Perceived Behavioural Control, Perceived Usefulness, Social Media Influence, Subjective Norms and Truthfulness are significant for both groups.

Some paths differ in within-group significance. Financial Awareness is significant among females (β = 0.116, p = 0.001) but not males (β = 0.059, p = 0.080). Financial Skill is significant among males (β = 0.084, p = 0.036) but not females (β = 0.033, p = 0.366). Herding Behaviour is non-significant and slightly negative among males (β = −0.018, p = 0.651), while it is positive and significant among females (β = 0.173, p < 0.001). Perceived Risk is non-significant among males (β = −0.022, p = 0.576) but significant and negative among females (β = −0.087, p = 0.016). Saving Habit is not significant for either gender group, and Self-Efficacy is significant only for females.

These differences in within-group significance do not, by themselves, establish a statistically significant difference between the groups. The formal PLS-MGA and Welch–Satterthwaite tests are therefore necessary for interpreting gender heterogeneity.

7.7 Measurement Invariance Assessment Using MICOM Procedure

The Multi-Group Analysis (MGA) was conducted after testing for measurement invariance following the procedure presented by Henseler et al. The three steps of the procedure are those of configural invariance, compositional invariance and equality of composite means and variances. Step 2 is especially relevant as compositional invariance is set when the original correlation between group-specific composites and the pooled composite is equal to or higher than 5% permutation quantile. Once the compositional invariance is met, meaningful comparisons of groups are enabled when partial measurement invariance is established. In accordance, MICOM was performed first among male and female respondents, and then PLS-MGA and the Welch–Satterthwaite test to test structural relationships, taking into account the appropriate caution in cases where full measurement invariance was not found.

Table 7.7 : MICOM Results – Assessment of Compositional Invariance Between Male and Female Respondents

Construct	Original Correlation	Correlation (Permutation	5% Quantile	Permutation p-value



		Mean)		
Attitude	1	1	0.999	0.731
Credibility	0.998	0.999	0.998	0.039
Financial Awareness	0.999	0.998	0.995	0.585
Financial Experience	0.993	0.998	0.995	0.023
Financial Skill	1	0.997	0.99	0.914
Herding Behaviour	0.999	0.998	0.995	0.482
Informative Influence	1	1	0.999	0.98
Investor Intention	1	1	0.999	0.692
Perceived Behavioural Control	0.996	0.998	0.995	0.123
Perceived Risk	1	0.999	0.996	0.995
Perceived Usefulness	0.998	0.999	0.996	0.157
Saving Habit	0.988	0.984	0.958	0.298
Self-Efficacy	0.997	0.999	0.995	0.111
Social Media Influence	1	0.999	0.996	0.925
Subjective Norms	0.997	0.997	0.992	0.315
Truthfulness	1	0.999	0.998	0.66

The MICOM results indicate that most constructs became compositional invariant, with all original correlations being higher than the corresponding 5% permutation quantiles. Permutation p-values were found to be lower than the recommended threshold for the following constructs: Credibility ($p = 0.039$) and Financial Experience ($p = 0.023$) which did not confirm compositional invariance. Thus, on the one hand it was not possible to demonstrate full compositional invariance and on the other hand partial measurement invariance could not be confirmed across male and female respondents. Thus the study was continued with PLS-MGA (Bootstrapping Multi-Group Analysis) and Welch – Satterthwaite test for analysing differences in structural relationship between both groups and the results are presented in the next section.

7.8 Multi-Group Analysis (MGA): Male and Female Respondents

The measurement and structural models were evaluated individually for males and females; and then Multi-Group Analysis (MGA) was performed to check for the differences in structural relationships between genders. After the assessment by MICOM, which did not yield full measurement invariance, we used PLS-MGA and the Welch–Satterthwaite test to compare path coefficients for the groups. The analysis reveals whether there is a significant difference between the strength of the relationship between the predictor constructs and Investor Intention, and it is verified by the consistency of the results in both tests.



Table 7.8: PLS-MGA Results for Gender-Based Differences in the Relationships Between Determinants and Investor Intention

Path	Difference (Male–Female)	1-Tailed p-value	2-Tailed p-value	Significant Difference
Attitude → Investor Intention	0.051	0.184	0.184	No
Credibility → Investor Intention	0.017	0.362	0.362	No
Financial Awareness → Investor Intention	-0.058	0.914	0.086	No
Financial Experience → Investor Intention	-0.031	0.758	0.242	No
Financial Skill → Investor Intention	0.050	0.148	0.148	No
Herding Behaviour → Investor Intention	-0.191	1.000	0.000	Yes
Informative Influence → Investor Intention	0.046	0.199	0.199	No
Perceived Behavioural Control → Investor Intention	0.046	0.195	0.195	No
Perceived Risk → Investor Intention	0.065	0.094	0.094	No
Perceived Usefulness → Investor Intention	0.014	0.392	0.392	No
Saving Habit → Investor Intention	0.006	0.428	0.428	No
Self-Efficacy → Investor Intention	-0.068	0.934	0.066	No
Social Media Influence → Investor Intention	-0.003	0.527	0.473	No
Subjective Norms → Investor Intention	0.033	0.222	0.222	No
Truthfulness → Investor Intention	0.070	0.094	0.094	No

The results of the PLS-MGA indicate that most PLS-MGA can be used without the need to account for the moderating effect of gender. Of the fifteen hypothesized relationships investigated, only one path (Herding Behaviour → Investor Intention) was statistically different between male and female respondents. The path difference for Herding Behaviour was −0.191 and the corresponding two-tailed p-value was 0.000, which revealed that there was a significant variation between the two genders in regards to the influence of herding behaviour on investor intention. This indicates that male and female investors are not similar in how much they depend on other investors actions and decisions for their investment intentions.

The MGA p-values for all other relationships were above the recommended significance level for p-values of 0.05, including Attitude, Credibility, Financial Awareness, Financial



Experience, Financial Skill, Informative Influence, Perceived Behavioural Control, Perceived Risk, Perceived Usefulness, Saving Habit, Self-Efficacy, Social Media Influence, Subjective Norms and Truthfulness. Hence, there was no statistically significant difference found in the respondents based on the two paths (males and females). Findings suggest that the influence of these determinants on investors' intention is fairly stable between genders.

In summary, according to the MGA results, the moderating role of gender can be concluded that it has limited influence in the proposed model. The determinants influence the intention to invest similarly for both male and female investors: only in the case of Herding Behaviour, the magnitude of the influence varies for the two gender groups. The findings therefore confirm that gender disparity in investment intentions are more linked with investors inclination to imitate others rather than with their attitude, awareness, skills and perceptions, and social influences.

7.9 Welch–Satterthwaite Test

Table 7.9: Welch–Satterthwaite Test Assessing Gender Differences in the Structural Relationships Influencing Investor Intention

Path	Difference (Male – Female)	t-value	p-value	Result
Attitude → Investor Intention	0.051	0.899	0.185	Not Significant
Credibility → Investor Intention	0.017	0.350	0.363	Not Significant
Financial Awareness → Investor Intention	-0.058	1.378	0.085	Not Significant
Financial Experience → Investor Intention	-0.031	0.701	0.242	Not Significant
Financial Skill → Investor Intention	0.050	1.043	0.149	Not Significant
Herding Behaviour → Investor Intention	-0.191	3.808	0.000	Significant
Informative Influence → Investor Intention	0.046	0.846	0.199	Not Significant
Perceived Behavioural Control → Investor Intention	0.046	0.857	0.196	Not Significant
Perceived Risk → Investor Intention	0.065	1.317	0.095	Not Significant
Perceived Usefulness → Investor Intention	0.014	0.279	0.390	Not Significant
Saving Habit → Investor Intention	0.006	0.143	0.443	Not Significant



Self-Efficacy → Investor Intention	-0.068	1.508	0.066	Not Significant
Social Media Influence → Investor Intention	-0.003	0.064	0.475	Not Significant
Subjective Norms → Investor Intention	0.033	0.766	0.222	Not Significant
Truthfulness → Investor Intention	0.070	1.323	0.094	Not Significant

Welch–Satterthwaite test was applied to further investigate if there were significant differences between male and female respondents in the structural relationships influencing Investor Intention. The results showed that most of the path coefficients were not significantly different between genders, with the p-values of the majority of the path coefficients showing that they had a p-value greater than 0.05. In particular, there were no significant statistical differences between the male and female respondents in the relationships between Attitude, Credibility, Financial Awareness, Financial Experience, Financial Skill, Informative Influence, Perceived Behavioural Control, Perceived Risk, Perceived Usefulness, Saving Habit, Self-Efficacy, Social Media Influence, Subjective Norms and Truthfulness.

There was however a significant difference between the genders for the relationship between Herding Behaviour and Investor Intention (Difference = -0.191, t = 3.808, p = 0.000). This result indicates that the impact of Herding Behaviour on Investor Intention is different for male and female investors. The negative difference implies that the effect from Herding Behaviour is greater on the female respondents compared to male respondents. This is in line with the result obtained from PLS-MGA which supports the fact that the effect of Herding Behaviour on Investor Intention is only significantly different between the male and female groups.

In general, the results of the Welch–Satterthwaite test do not support the hypothesis that there is an appreciable difference in most of the structural relationships during the model for the two genders. The only exception is Herding Behaviour, which shows a statistically significant difference between male and female investors, emphasizing the need to focus on gender in analysing the impact of social imitation and group decisions on investing behaviour.

8. Theoretical and Practical Implications

The study contributes to the ETF investment-intention literature by integrating financial advertisement antecedents, behavioural determinants and financial literacy within an extended TPB and S–O–R framework. The results indicate that Investor Intention is associated not only with individual behavioural characteristics but also with the quality and usefulness of financial information. Informative Influence, Attitude and Perceived Behavioural Control occupy important positions in the overall structural assessment.

The gender comparison also provides a methodological contribution. Differences in the significance of paths within male and female models should not automatically be interpreted



as gender differences. Such claims require direct tests of the path coefficients. In the present study, formal multi-group procedures identify a statistically significant difference only for the Herding Behaviour relationship.

For financial intermediaries, ETF providers and investor-education organisations, the findings indicate the relevance of communicating information that investors can understand and use when evaluating ETFs. Product characteristics, costs, diversification, liquidity and risk should be presented clearly. The results concerning Truthfulness and Credibility also underscore the importance of accurate and transparent financial communication.

Investor education can additionally address financial awareness, practical financial skills and knowledge of ETF products. Digital channels and social-media platforms may provide useful avenues for investor education because Social Media Influence is statistically relevant in both gender-specific models. At the same time, the significant gender difference observed for Herding Behaviour suggests that investors should be encouraged to evaluate investment information independently rather than relying exclusively on the actions or opinions of other investors.

For regulators and investor-protection bodies, the results support continued attention to the clarity and reliability of financial information. The evidence does not justify assuming that male and female investors differ across every determinant. Instead, gender-related variation appears to be specific to particular structural relationships, with Herding Behaviour being the statistically significant case in the present model.

9. Limitations and Future research

Several limitations define the scope of the findings. First, the cross-sectional design captures investor perceptions and intentions at one point in time. It cannot establish how these relationships may change as market conditions, financial experience or knowledge evolve. Longitudinal research could therefore examine changes in ETF investment intention over time.

Second, the study is based on 507 retail investors in India. The findings are consequently grounded in the Indian retail-investment context. Replication across countries and investment markets would help assess the extent to which the proposed relationships are transferable to other settings.

Third, the present multi-group analysis focuses on gender. Future research could examine heterogeneity according to age, income, investment experience, financial literacy, investment sophistication or other investor characteristics. Finally, the dependent construct is investment intention rather than observed investment behaviour. Future studies could combine longitudinal surveys or actual investment records with the proposed framework to investigate the transition from intention to behaviour. Additional research could also incorporate emerging digital factors such as financial influencers, digital advisory platforms and social-media-based investment information.

10. Conclusion



This study examined the determinants of ETF investment intention among Indian retail investors by integrating financial advertisement antecedents, behavioural determinants and financial literacy within an extended TPB and S–O–R framework. Based on responses from 507 investors, the results demonstrate that informational, behavioural and financial factors collectively contribute to Investor Intention.

At the aggregate level, Informative Influence, Attitude, Truthfulness and Perceived Behavioural Control showed positive and statistically significant relationships with Investor Intention, while Perceived Risk was negatively related to intention. The model explained 79.2% of the variance in Investor Intention for the overall sample.

The gender analysis provides a more specific interpretation. Although several relationships differ in their within-group significance patterns, direct multi-group testing identified a statistically significant difference only for the path from Herding Behaviour to Investor Intention. Thus, the evidence points to relationship-specific rather than universal gender heterogeneity within the proposed model.

The IPMA findings complement the structural results by identifying Informative Influence and Attitude as prominent determinants and Perceived Risk as a negative-importance construct. Taken together, the findings illustrate the value of considering informational, behavioural and financial-literacy dimensions simultaneously when studying ETF investment intention. They also demonstrate the importance of distinguishing within-group significance from formal between-group differences when interpreting gender-based investment research.

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