

“How does risk aversion shape investors’ intentions? Evidence from the Indian corporate bond market”

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HOW DOES RISK AVERSION SHAPE INVESTORS' INTENTIONS? EVIDENCE FROM THE INDIAN CORPORATE BOND MARKET

Abstract

Risk aversion plays a crucial role in understanding how individuals make financial decisions and allocate their resources. This study analyzes the influence of risk aversion on behavioral intentions and explores the mediating role of attitudes, subjective norms, and perceived behavioral control. Additionally, it investigates the moderating effect of gender and financial literacy on behavioral intentions of investors. A sample of 400 people was collected from Indian retail investors by administering a structured questionnaire through stock brokering firms, and data were analyzed using Partial least squares – Structural equation modelling in the Smart PLS 3.3.9 software. The research found that risk aversion, attitude, subjective norms, and perceived behavioral control significantly impact an investor's intention. Among all the antecedents of behavioral intentions, perceived behavioral control (β 0.481*) was found as a significant predictor of the intention compared to attitude (β 0.154*), subjective norms (β 0.224*) and risk aversion (β 0.082*) factors. Further, mediation analysis found that attitude, subjective norms, and perceived behavioral control partially mediated the relationship between risk aversion and intention. Lastly, the multi-group analysis revealed that gender and financial literacy did not moderate the association between risk aversion and intention.

Keywords

risk aversion, corporate bond market, theory of planned behavior, investor intention, financial literacy, multi-group analysis, behavioral finance, investor decision making

JEL Classification

G20, G40, G41, E71

INTRODUCTION

A deep-rooted corporate bond market is essential for the stabilized financial system and sustainable development of the economy. It reduces the reliance on external borrowings and credit default risk by ensuring diversified financial requirements as well as efficient allocation of funds (Gupta, 2020). In comparison to global bond markets, the Indian corporate bond market is still in its infancy. The corporate bond market to GDP ratio is 18% in India, whereas in the USA, 123.47%, South Korea, 74.03%, Brazil 99.05%, and Turkey, 142.06%. It has been reasoned out in reports that a substantial proportion of private placement, lack of investor awareness and transparency, and absence of unified and effective trading mechanisms, and liquid funds caused low retail participation and underdevelopment of the Indian corporate bond market (Acharya, 2011; Gwalani & Bharati, 2015). A diversified investor base is essential to reduce capital erosion and credit default risk in the corporate bond market, as the risk of the investment will be shared among a large number of investors (Nandan & Saurabh, 2016). It is imperative to study the factors that influence market participation and the underlying causes of individuals' avoidance of participating in the bond market. It has been demonstrated that

individual psychological factors such as investors' preferences, beliefs, and psychological biases significantly influence stock market participation (Luotonen, 2009).

Investors' decision making has been approached from the economic viewpoint, which advocates that the individual is rational in decision making. Nevertheless, recent studies in behavioral finance argued that individuals do not act rationally and exhibit irrational behavior in decision making. These have been guided by several psychological and cognitive biases (Lacalle, 2018). Prospect theory describes that the individual's decision-making process predicts that people are more risk-averse when it comes to avoiding losses than they are when it comes to making gains. It has been observed that risk aversion is inversely associated with stock market participation (Mayfield et al., 2008) and positively associated with fixed-income avenues such as bonds and deposits (Grable & Lytton, 2003). Hence, it is believed as an important factor in studying investor behavior. Recent evidence demonstrates that behavioral intention and investment behavior are extensively investigated in the context of the equity segment. However, studies have failed to examine the investors' intention to invest in the corporate bond market.

The prior work has examined the indirect relationship between risk aversion and intention through attitude, subjective norms and PBC and evidenced inconclusive results (Raut, 2020; Mulyono, 2021). It is important to note that there is limited research exploring the role of intermediary variables between investors' risk aversion and their behavioral intentions. Studies have also highlighted a significant gap in investigating gender and financial literacy as potential categorical moderators. Consequently, this study sought to answer whether risk aversion influences the behavioral intention of investors. Further, do attitude, subjective norms, and perceived behavioral control mediate the relationship between risk aversion and behavioral intention? Finally, does financial literacy and gender moderate the proposed relationships? Hence, this study is designed to empirically gain insights on factors shaping investors' intentions and their preferences towards the corporate bond market within the realm of finance.

1. LITERATURE REVIEW AND HYPOTHESES

The study utilizes the theory of planned behavior (TPB) (Ajzen, 1991) and prospect theory (Kahneman & Tversky, 1979) to formulate the prediction about investors' intentions towards the Indian corporate bond market. The prospect theory argues that individuals' decisions are not always rational as they consider gains and losses differently. It provides an accurate decision model to decision makers when risk is involved. It states that "people engage in decision-making based on the potential value of losses and gains rather than the outcome, i.e., individuals dislike losing more than winning". Risk aversion implies that investors behave in such a way as to minimize losses, as losses seem larger than gains, even though the probability of those losses are small. TPB (Ajzen, 1991) is considered as a prominent theory in predicting and explaining individuals' behavior. TPB is an extension of the "Theory of Reasoned Action" (Ajzen & Fishbein, 1980). The theory proposes that intention and perceived behavioral control (PBC)

are the foremost antecedents of behavior (Ajzen, 1991; Ajzen & Fishbein, 2000). The intention of an individual is determined by three antecedents, i.e., subjective norms (SN), attitude (AT), and PBC.

Risk aversion (RA) refers to the tendency or attitude to avoid risk (Mayfield, 2008; Díaz & Esparcia, 2019). Risk aversion is inverse to risk tolerance (Kogan & Wallach, 1964). The risk behavior of investors is highly associated with investors' investment intentions (Díaz & Esparcia, 2019). Individuals' preference for the investment is normally assessed through risk appetite (Grable & Roszkowski, 2008). A study by Aren and Zengin (2016) exhibited that risk perception significantly influences investment preference. Individuals who tend to avoid risk prefer safe investments such as deposits and bonds. Conversely, individuals with high tolerance tend to choose riskier investment avenues such as equity and forex. Mayfield et al. (2008) reported a negative relationship between risk aversion and short-term, long-term investment intention. Dinç Aydemir and Aren (2017) also stated that risk aversion negatively impacted

the behavioral intention of investors. It implies that if investors are more risk-averse, the intention to invest in stock is less (Ahmed et al., 2020). The study by Grable and Lytton (2003) found that risk tolerance positively impacted the intention to invest in equity-related avenues and negatively influenced fixed-income investments such as bonds and cash ownership. A study investigating the impact of risk tolerance on investors' intention toward stocks and securities reported that investors who are less risk-averse or risk-tolerant tend to invest in stocks in the context of Kazakhstan (Pak & Mahmood, 2015). Evidence presented suggests that risk aversion positively impacts stock market participation (Xu, 2018).

Attitude towards behavior denotes "the extent to which an individual has a favorable or negative evaluation of the target behavior or favorable or unfavorable belief towards behavior" (Fishbein & Ajzen, 1975). Attitude aids the individual in performing or not performing any action by considering its positive or negative consequences. Raut (2018) opined that attitude is considered as one of the influential determinants of intention, i.e., an investor is guided by his own beliefs or attitude more significantly than other factors. From the investor's point of view, "the positive attitude of an investor towards the behavior results in forming the intention and performing the trading behavior". Previous evidence revealed that attitude is a key indicator of investors' intention, which positively influences the investors' intention (Gopi & Ramayah, 2007; Sondari & Sudarsono, 2015; Raut, 2018). Conversely, Sivaramakrishnan et al. (2016) found a negative impact of attitude on the intention of investors. Subjective norm is the "individual perception of the likelihood that the potential group or individual approves or disapproves of performing the behavior in TPB" (Ajzen, 1991). The influence of friends, colleagues, and family members motivates individuals to engage in a behavior even if they lack personal interest in it. In the context of investors, social pressure can lead them to adopt investment behavior that diverges from their own inclinations. Subjective norms or social influence like media reports positively impacted the investment intention (Gopi & Ramayah, 2007; Sondari & Sudarsono, 2015; Sivaramakrishnan et al., 2016; Ibrahim & Arshad, 2017; Raut, 2018). Conversely, research findings (Shanmugham &

Ramya, 2012; Mahastanti & Hariady, 2014) stated that subjective norms negatively impacted investors' intentions. PBC is referred as "given the presence or absence of requisite resources and opportunities, the individual's perception of the ease or difficulty in performing the behavior of interest" (Ajzen, 1991, 2002). High levels of PBC enhance motivation and determination to achieve the desired behavior. PBC is measured as an investor's control over their decision or intention to invest in the corporate bond market, considering underlying factors, resources, and barriers. Prior research has consistently indicated that PBC significantly influences intention (Gopi & Ramayah, 2007; Cuong & Jian, 2014; Sivaramakrishnan et al., 2016; Ibrahim & Arshad, 2017; Raut, 2018). Investors' confidence in their ability to perform the behavior positively affects their intention. However, a study by Sondari and Sudarsono (2015) found that PBC did not predict behavioral intention among investors.

A recent study by Ajzen (2020) stated that TPB is open to expand further by including the additional predictors in the prevailing model. According to Ajzen (2020), background variables, including risk perception, personality characteristics, and demographic factors, may be utilized to investigate an indirect effect through TPB constructs such as AT, SN, and PBC. Munir et al. (2019) found that AT, SN and PBC fully mediated the relationship between risk-taking propensity and intention in the context of Pakistan, while in the context of China, AT fully mediated, and SN and PBC did not mediate the association between risk-taking propensity and intention. Similarly, Rosique-Blasco et al. (2017) and Zhang and Cain (2017) revealed that attitude mediated the relationship between risk aversion and entrepreneurial intention. Further, Kautonen et al. (2009) tested the mediating effect of AT, SN, and PBC and found that all the antecedents were partially mediated. From the investor's perspective, attitude towards the behavior was studied as the mediating variable that fully mediated the relationship between the personality of the investor and long-term intention, partially mediated between the short-term intention of the investor (Nandan & Saurabh, 2016; Akhtar & Das, 2018; Lai, 2019). In addition, studies also explored the mediating role of AT, SN and PBC between financial literacy and investors' intention and found

that AT, SN and PBC partially mediated the relationship between financial literacy and investor intentions (Raut, 2020; Mulyono, 2021). Further, Ali (2011) extended the TPB by exploring the mediation analysis of attitude and found that attitude partially mediated the association between risk perception and investors' intention.

Furthermore, financial literacy has a substantial influence on investor decision making. Financial literacy is conceptualized as "the ability of the person to understand the financial or investment concepts and use them to manage financial resources effectively for a lifetime of financial well-being" (Hung et al., 2009; Lusardi et al., 2011). Higher financial knowledge leads to more market participation and trading. Rooji et al. (2007) found that financial literacy has a significant positive influence on stock market participation. Basic knowledge of inflation, interest rate, stocks and bonds increase stock market participation. Prior studies argued that an individual's financial literacy significantly influences risk-taking behavior. Individuals with a low level of financial literacy underestimate their skills and avoid investing in volatile investment avenues due to a lack of confidence in other factors. Inversely, individuals overvalue their financial knowledge and invest in volatile and risky investments (Beal & Delpachitra, 2003; Grable, 2008; Aren & Hamamci, 2019; Kanagasabai & Aggarwal, 2020). Further, Aren and Zengin (2016) revealed that investors with low financial literacy levels positively impacted risk aversion and preferred low-risk investments like bank deposits. Individuals with the intermediate range choose to diversify their portfolio to balance risk.

In comparison, high financial literacy negatively impacted risk aversion. Investors with high financial literacy prefer investing in high-risk investments such as equities. The above research findings are supported by the findings of Aren and Zengin (2016), Inslar et al. (2016), Bayar et al. (2020), and Hermansson and Jonsson (2021). Moreover, Jiang et al. (2020) explored the significant relationship between financial literacy and investment performance among mutual funds. The study found that AFL significantly influences investment performance more than low literacy. High-financial-literate investors are less likely to experience losses and concerned about fee-related issues. Further,

the moderating role of financial literacy has been explored in the relationship between risk aversion and investment intention. Sadiq and Khan (2019) found that financial literacy did not moderate the relationship between risk aversion and long-term and short-term investment intentions. However, it has a direct positive influence on investors' investment intentions. Similarly, Dinç Aydemir and Aren (2017) also studied the moderating role of financial literacy and found that financial literacy did not moderate the relationship between the risk aversion and behavioral intentions of investors. Moreover, demographic factors such as age, income, education, and financial literacy are highly associated with risk aversion. The impact of risk aversion on investors' decision making differs based on gender. Studies revealed that female investors are more risk-averse and choose less risk-associated investments than male investors (Keller & Siegrist, 2006; Barasinska et al., 2009; Montford & Goldsmith, 2015; Dickason & J. Ferreira, 2018; Lawrenson & Dickason-Koekemoer, 2020). In contrast, Pak and Mahmood (2015) and Aren and Zengin (2016) found that women are more risk-tolerant than men and prefer to invest in stocks and securities in the context of Kazakhstan.

The studies presented thus far suggest the mediating role of constructs of TPB such as AT, SN and PBC in the context of entrepreneurial intention (Kautonen et al., 2009; Rosique-Blasco et al., 2017; Zhang & Cain, 2017; Munir et al., 2019) and students' behavior towards sports (Liao et al., 2022). However, there are limited studies examining the mediating effect of AT, SN and PBC between either personality traits and intention (Nandan & Saurabh, 2016; Akhtar & Das, 2018; Lai, 2019) or financial literacy and intention (Raut, 2020; Mulyono, 2021). Furthermore, no research has studied the mediating effect of AT, SN and PBC between risk aversion and investors' intention toward corporate bond markets. Hence, the present study examines the mediating effect of TPB constructs to address the research gap. In addition, existing literature is limited to exploring the moderating role of financial literacy and gender between specific relationships in the model. The current study emphasizes examining the moderating role of financial literacy and gender among all the relationships in the model. Hence, the following hypotheses are formulated:

- H_1 : Risk aversion has an impact on behavioral intention.
- H_2 : Attitude has a significant impact on behavioral intention.
- H_3 : Subjective norms have a significant impact on behavioral intention.
- H_4 : PBC has a significant impact on behavioral intention.
- H_5 : Attitude, subjective norms, and PBC mediate the relationship between risk aversion and behavioral intention.
- H_6 : Financial literacy moderates the relationships among risk aversion, attitude, subjective norms, PBC and investors' intention.
- H_7 : Gender moderates the relationships among risk aversion, attitude, subjective norms, PBC and investors' intention.

2. METHODS

The study examines the influence of risk aversion on the behavioral intention of retail investors to invest in corporate bonds. The primary data were obtained from retail investors from the Indian stock market through a structured questionnaire. The minimum sample size was determined using the 10-times rule of thumb (Hair et al., 2011) and Raosoft's online calculator. This rule advocates that the minimum number of samples should be ten times the number of inner or outer model arrows pointing at the latent endogenous variable. In the present study, four outer and sixteen inner model arrows point to the latent variables. Therefore, the minimum sample size is 200. Furthermore, the Raosoft online calculator was used to calculate the minimum required sample based on a 95% confidence interval, error of margin of 5% and response distribution of 50%. The minimum sample is 377 (Scott & Smith, 1969; Memon et al., 2020). The questionnaire was distributed to 750 retail investors through stock broking agencies and directly by means of messages and emails; among those, 412 responses were received. Further, responses were

screened, and 12 responses were eliminated due to unengaged responses and finally 400 responses retained for the analysis. The sample size was higher than the minimum sample size criteria.

The questionnaire tool was developed by adopting the measurement scales from the existing literature. The first part of the questionnaire comprised demographic factors such as gender, age, occupation, education qualification and annual income. The second part of the tool contained questions on attitude, subjective norms, perceived behavioral control, and behavioral intention with 3 items each (Taylor & Todd, 1995; Chen, 2007; Akhtar, 2017; Raut et al., 2018) and risk aversion construct with four indicators (Mayfield et al., 2008). All measuring indicators were measured on a five-point Likert scale ranging from 5 (strongly disagree) to 1 (strongly agree). The last part of the questionnaire measured the respondents' financial literacy using scales of (Van Rooij et al., 2009; Van Rooij et al., 2011). This scale has two dimensions, namely, advanced and basic financial literacy. The first five questions measure basic financial literacy, and the remaining measure advanced financial literacy. For each right answer, one point was given. Based on the aggregate points, if the aggregate value was equal or greater than the median considered as advanced financial literacy and lower than median value is regarded as basic financial literacy. Appendix Table 1 exhibits the measurement items with their sources.

The PLS-SEM technique was applied for data analysis using the Smart PLS 3.3.9 software. This multivariate technique simultaneously evaluates the structural relationship between the latent variables in the path model. PLS-SEM comprises measurement and structural models. The measurement model consists of reliability and validity. The reliability tests such as outer loadings (Hair et al., 2019), Cronbach's alpha (Cronbach, 1951) and composite reliability (Peterson & Kim, 2013) were ascertained to test the consistency of the measures. The validity tests were used such as Average of variance extracted (AVE) (Hair et al., 2011; Hair et al., 2019) to examine the convergent validity and the Fornell-Larcker Criterion (Fornell & Larcker, 1981; Hair et al., 2011; Hair et al., 2019) and Heterotrait-Monotrait Ratio (HTMT) (Hair

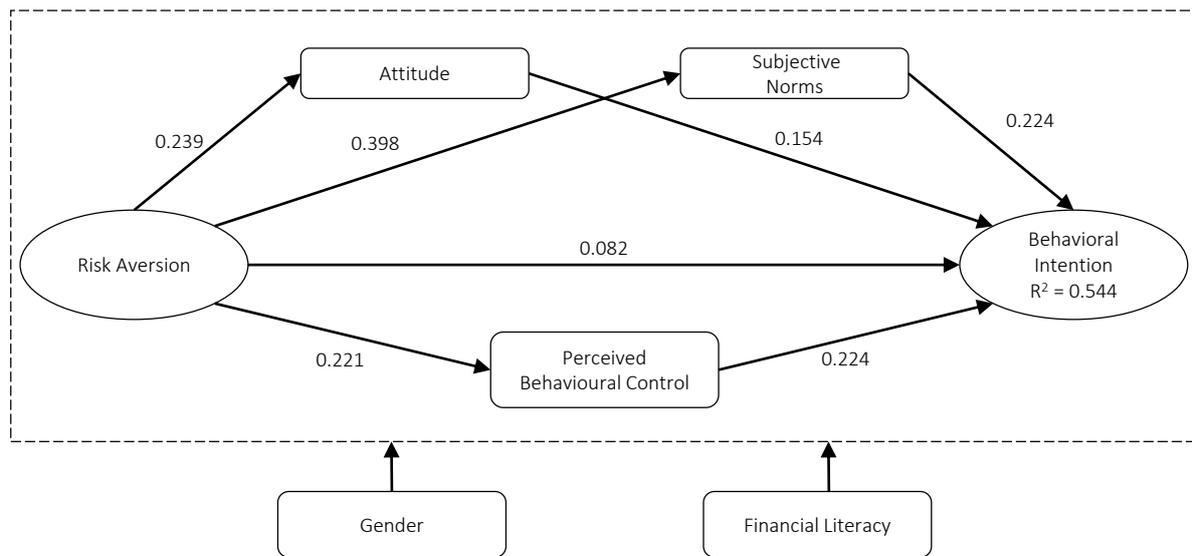


Figure 1. Conceptual framework

et al., 2011; Henseler et al., 2015; Hair et al., 2019) to evaluate the discriminant validity. Structural relationships between latent variables were assessed using the path coefficient values, the explanatory power of exogenous variables with the help of R² and predictive relevance using Q² values. Further, mediation analysis of AT, SN, and PBC was done by comparing the specific indirect effect and direct effects of the paths. In addition, multi-group analysis (PLS-MGA) was performed to examine the moderating effect of financial literacy and gender as these factors are categorical in nature. As a prerequisite to the PLS-MGA, measurement invariance was confirmed using the MICOM (Measurement Invariance of Composite Models), which includes the configural invariance, compositional invariance, and equal means and variances assessment.

3. RESULTS

Table 1 exhibits the respondents' profile. Among 400 respondents, 51.7% were male investors, and 48.3% were female. More than half of the respondents were aged less than 30 years (58.0%). In addition, 68.8% of respondents' annual income is less than five lakhs. Around 43.0% represent the salaried class, followed by 9.3% business class and 13.8% professionals. Education classification depicts that 31.3% were graduates and 47.0% were post-graduates.

Table 1. Details of respondents' profile

Characteristics		Frequency	Percentage
Gender	Male	207	51.7%
	Female	193	48.3%
Age	Less than 30	232	58.0%
	31-40	79	19.8%
	41-50	59	14.8%
	51-60	20	5.0%
	60 and above	10	2.5%
Education Qualification	Below 12th class	11	2.8%
	Under-graduate	125	31.3%
	Post-graduate	188	47.0%
	Professional	64	16.0%
Occupation	others	12	3.0%
	Salaried	172	43.0%
	Business	37	9.3%
	Professional	55	13.8%
	Retired	13	3.3%
Annual income	Housewife	18	4.5%
	others	105	26.3%
	Less than 5 lakhs	275	68.8%
	> 5L – < 10L	66	16.5%
	> 10L – < 15L	38	9.5%
> 15L	21	5.3%	

Initially, the measurement model was assessed as a prerequisite to the structural models. Structural models' values were considered inappropriate and meaningless unless the measurement models, such as reliability and validity, were confirmed. Reliability is further classified as indicator reliability and internal consistency reliability. The outer loading values of the latent variables were used

Table 2. Results of the measurement model

Constructs	Items	Outer loadings	Cronbach's Alpha	Composite Reliability	AVE
Attitude	AT1	0.918	0.897	0.935	0.829
	AT2	0.900			
	AT3	0.913			
Behavioral intention	BIT1	0.838	0.786	0.876	0.702
	BIT2	0.894			
	BIT3	0.777			
Perceived behavioral control	PBC1	0.882	0.884	0.928	0.811
	PBC2	0.898			
	PBC3	0.922			
Risk aversion	RA1	0.821	0.858	0.903	0.700
	RA2	0.807			
	RA3	0.877			
	RA4	0.84			
Subjective norms	SN1	0.866	0.870	0.921	0.794
	SN2	0.894			
	SN3	0.912			

to assess the indicator reliability of the constructs. The threshold value equal to or higher than 0.708 is considered as the existence of indicator reliability (Hair et al., 2019). The outer loading values for all the constructs were consistently more than the threshold value of 0.708. Therefore, indicator reliability is established. Cronbach's alpha and composite reliability tests were employed to measure the internal consistency reliability. A threshold value of 0.70 or more was considered as reliable. Table 2 exhibits that Cronbach's alpha and composite reliability test values were more than the threshold value of 0.70 for all the constructs. Hence, reliability was established.

Validity measures the accuracy of the measure. It is classified as convergent and discriminant validity. Average variance extracted scores were used to measure the convergent validity. An AVE score equal to or greater than 0.5 is considered as acceptable. Table 3 indicates the AVE score higher than 0.5 for all the latent variables in the model. Therefore, convergent validity was established. Discriminant validity measures the distinctiveness of the constructs in the model. Fornell-Lacker criterion and HTMT ratio were applied to verify the discriminant validity. Fornell-Lacker criterion compares the square root of AVE values with the correlation of the variables. The square root of AVE values is greater than the correlation of the variables in Table 2. Therefore, discriminant validity is established. Furthermore, the HTMT ratio is considered a more robust method to verify the

discriminant validity. A value of more than 0.9 is considered as an absence of discriminant validity. Table 4 indicates that the HTMT ratio values are less than 0.9 for all the latent variables. Hence, discriminant validity is acceptable.

Table 3. Fornell-Larcker criterion results

Fornell-Larcker Criterion					
	AT	BIT	PBC	RA	SN
AT	0.91				
BIT	0.496	0.838			
PBC	0.436	0.665	0.901		
RA	0.239	0.313	0.22	0.837	
SN	0.495	0.548	0.447	0.398	0.891

Table 4. Heterotrait-Monotrait ratio (HTMT ratio) results

HTMT ratio					
	AT	BIT	PBC	RA	SN
AT					
BIT	0.589				
PBC	0.488	0.796			
RA	0.27	0.375	0.249		
SN	0.557	0.663	0.508	0.457	

Table 5 shows the coefficient values of structural relationships. The path coefficient values were extracted using the PLS bootstrapping method, which bootstraps the current sample to 5,000 samples. Risk aversion has a positive impact on the behavioral intention of the investors towards the Indian corporate bond market (β 0.082*) at a 5% level of significance. Similarly, the constructs

of TPB such as attitude (β 0.154*), subjective norms (β 0.224*) and perceived behavioral control (β 0.481*) have a significant positive influence on the behavioral intentions of investors. Among all the antecedents of behavioral intention, PBC was found as a significant predictor of the intention compared to attitude, subjective norms and risk aversion factors. R^2 indicates the explanatory power of the exogenous variables. A greater value of R^2 is considered as greater the explanatory power of the exogenous variables. Table 6 shows the $R^2 = 0.544$; It explains that 54.4% of investors' behavioral intention changes are explained by risk aversion, attitude, subjective norms and PBC. Furthermore, the Q^2 value was extracted through a PLS blindfolding procedure to evaluate the predictive relevance of the model. As a rule of thumb, the Q^2 value should be more than zero for a specific endogenous variable to establish the predictive relevance. In the current model, $Q^2 = 0.377$ implies that the PLS path model has predictive relevance for this construct behavioral intention.

Table 6 exhibits the results of the mediation analysis. Attitude, subjective norms, PBC mediate the relationship between risk aversion and the behavioral intention of investors. The results of the specific indirect effect are denoted as (α) and direct effect as (β). Attitude partially mediated the relationship between risk aversion and intention ($RA \rightarrow AT \rightarrow BIT$). The signs of the specific indirect effect (α 0.037*) and direct effect (β 0.082*) were significant and positive at a 5% significance level. Therefore, it is regarded as complementary partial mediation. Similarly, subjective norm and PBC ($RA \rightarrow PBC \rightarrow BIT$) partially mediated the relationship between risk aversion and intention. In addition,

path coefficient signs of the specific indirect effect and direct effect were significant at the 5% significance level and positive $RA \rightarrow PBC \rightarrow BIT$ (α 0.106*, β 0.082*), $RA \rightarrow SN \rightarrow BIT$ (α 0.089*, β 0.082*). Hence, it is considered as a complementary partial mediation.

Further, MGA was used to examine the moderating effect of categorical variables such as gender and financial literacy. Confirming the measurement invariance is considered as prerequisite to running the MGA for multiple groups in PLS-SEM (Hair et al., 2014; Henseler et al., 2016). The current study applied the MICOM test to verify the measurement invariance (Henseler et al., 2016), which includes configural invariance, compositional invariance and equal means and variances assessments. Configural invariance is the subjective evaluation of measurement in variance. It has been ensured by (a) establishing indicators' equivalence (identical indicators and scales of constructs across the groups), (b) confirming uniform data treatment i.e., coding, reverse coding, recording, across the groups, and (c) maintaining the identical algorithm setting and optimization criteria. In the current analysis, all the requirements for gender (Table 7) and financial literacy (Table 8) are fulfilled. Hence, configural invariance is established for the subgroups such as gender and financial literacy. The results of compositional invariance are extracted from step 2 of the MICOM procedure. In Tables 7 and 8, composite scores are within the range of the 5% quantile and 1. Therefore, there is compositional invariance for the groups gender and financial literacy. The establishment of configural and compositional invariance is referred to as the establishment of par-

Table 5. Results of the structural model

Hypothesis	Path	Path coefficient (β)	p-values	R^2	Q^2	Decision
H ₁	RA \rightarrow BIT	0.082*	0.039	0.544	0.377	Yes
H ₂	AT \rightarrow BIT	0.154*	0.001			Yes
H ₃	SN \rightarrow BIT	0.224*	0.000			Yes
H ₄	PBC \rightarrow BIT	0.481*	0.000			Yes

Table 6. Results of mediation analysis

Hypothesis	Path	Specific indirect effect (α)	Direct effect (β)	Decision
H _{5a}	RA \rightarrow PBC \rightarrow BIT	0.106*	0.082*	Partial mediation (Complementary)
H _{5b}	RA \rightarrow SN \rightarrow BIT	0.089*	0.082*	Partial mediation (Complementary)
H _{5c}	RA \rightarrow AT \rightarrow BIT	0.037*	0.082*	Partial mediation (Complementary)

Table 7. Results of MICOM (Gender)

	Configural Invariance	Compositional Invariance			Partial invariance	Equal mean assessment			Equal variance Assessment			Full Invariance
		Original Correlation (c)	confidence interval (5%)	p-value		Difference	95% confidence interval	p-value	Difference	95% confidence interval	p-value	
AT	Yes	0.999	(0.998, 1.000)	0.347	Yes	-0.016	(-0.203, 0.182)	0.875	-0.050	(-0.302, 0.287)	0.745	Yes
BIT	Yes	1.000	(0.998, 1.000)	0.415	Yes	0.094	(-0.186, 0.218)	0.350	-0.077	(-0.248, 0.246)	0.544	Yes
PBC	Yes	1.000	(0.999, 1.000)	0.333	Yes	-0.046	(-0.197, 0.199)	0.650	0.159	(-0.237, 0.225)	0.161	Yes
RA	Yes	0.995	(0.993, 1.000)	0.109	Yes	0.081	(-0.204, 0.215)	0.424	0.030	(-0.222, 0.233)	0.800	Yes
SN	Yes	1.000	(0.999, 1.000)	0.496	Yes	0.059	(-0.192, 0.207)	0.550	-0.064	(-0.228, 0.204)	0.563	Yes

Table 8. Results of MICOM (Financial literacy)

	Configural Invariance	Compositional Invariance			Partial invariance	Equal mean assessment			Equal variance Assessment			Full Invariance
		Original Correlation (c)	confidence interval (5%)	p-values		Difference	confidence interval (5%)	p-values	Difference	confidence interval (5%)	p-Values	
AT	Yes	0.999	(0.999, 1.000)	0.332	Yes	0.351	(-0.215, 0.196)	0.002	-0.182	(-0.292, 0.326)	0.243	Yes
BIT	Yes	0.999	(0.999, 1.000)	0.348	Yes	-0.092	(-0.217, 0.188)	0.376	-0.11	(-0.261, 0.224)	0.342	Yes
PBC	Yes	1.000	(1.000, 1.000)	0.462	Yes	0.146	(-0.212, 0.197)	0.160	-0.14	(-0.212, 0.248)	0.212	Yes
RA	Yes	0.997	(0.998, 1.000)	0.272	Yes	-0.181	(-0.201, 0.198)	0.078	-0.002	(-0.238, 0.240)	0.985	Yes
SN	Yes	0.999	(1.000, 1.000)	0.182	Yes	-0.003	(-0.205, 0.186)	0.978	0.151	(-0.220, 0.248)	0.200	Yes

Table 9. Results of MGA (Gender)

Path	Path Coefficients (Male)	Path Coefficients (Female)	Path Coefficients Difference	Hensler's p-value	Permutation p-value	Decision
AT → BIT	0.131*	0.172*	-0.042	0.663	0.660	No
PBC → BIT	0.387*	0.574*	-0.187*	0.034*	0.045*	Yes
RA → AT	0.281*	0.193*	0.087	0.445	0.455	No
RA → BIT	0.122*	0.047*	0.075	0.327	0.355	No
RA → PBC	0.288*	0.166	0.122	0.291	0.292	No
RA → SN	0.403*	0.397*	0.006	0.954	0.95	No
SN → BIT	0.265*	0.19*	0.075	0.456	0.489	No

Table 10. Results of MGA (Financial literacy)

Path	Path Coefficients (Advanced FL)	Path Coefficients (Basic FL)	Path Coefficients Difference	Hensler's p-value	Permutation p-value	Decision
AT → BIT	0.256*	0.035	0.221	0.016*	0.021*	Yes
PBC → BIT	0.467*	0.491*	-0.024	0.813	0.789	No
RA → AT	0.252*	0.279*	-0.027	0.811	0.835	No
RA → BIT	0.056	0.086	-0.03	0.734	0.724	No
RA → PBC	0.113	0.427*	-0.314	0.010*	0.013*	Yes
RA → SN	0.381*	0.444*	-0.063	0.534	0.530	No
SN → BIT	0.193*	0.277*	-0.084	0.419	0.454	No

tial invariance. Step 3 in the MICOM procedure further enquires to test the full invariance using equal means and variance assessment. Tables 8 and 9 exhibit that the difference of the composite scores lies between the lower and upper boundaries at a 95% confidence interval. Hence, full invariance is established for the groups gender and financial literacy.

Table 9 exhibits the results of a multi-group analysis of gender (H_6). Gender was studied as a moderator, which was categorized as male and female. Hensler's MGA and permutation test methods were employed to assess the moderating effect of gender. As per this method, the p-values of the path coefficient difference lower than 0.05 imply significant differences between specific path coefficients across two groups at 5% significance (Henseler et al., 2009; Sarstedt et al., 2011). According to the permutation test, a p-value of the path coefficient is lower than 0.05 regarded as significant. The p-value of Hensler's MGA and permutation test for the path coefficient difference (-0.187*) for the relationship between PBC and intention were less than 0.05. This implies the significant difference in the impact of PBC (-0.187*) on BIT between male and female groups. The positive impact of PBC on the behavioral intention was stronger for female investors than males. In contrast, there is no significant difference in the relationship between risk aversion, attitude, subjective norms, and intention.

The findings of the MGA of financial literacy are shown in Table 10 (H_7). Financial literacy is categorized as advanced and basic financial literacy. Hensler's MGA and permutation test p-values were less than 0.05 for the relationship between attitude and intention, and risk aversion and PBC. The positive impact of attitude on behavioral intention is stronger among investors with an advanced financial literacy level. Therefore, advanced financial literacy significantly moderates the relationship between attitude and intention. Likewise, the positive association between risk aversion and PBC was stronger among investors with basic financial literacy. Basic financial literacy moderates the relationship between risk aversion and PBC. Financial literacy did not moderate the relationship between subjective norms, risk aversion and intention.

4. DISCUSSION

Initially, the study examined the impact of risk aversion on the behavioral intention of investors. The study found that risk aversion positively impacted behavioral intention towards corporate bonds. The current study results were inconsistent with the results of Mayfield et al. (2008), who argued that risk aversion negatively impacted the investor's long-term and short-term intention to invest in stocks. Similarly, Dinç Aydemir and Aren (2017) and Ahmed et al. (2020) argued that investors who tend to avoid the risk do not prefer to invest. Conversely, the current study results were consistent with the results of Aren and Zengin (2016) and Xu (2018), which reported that more risk-averse investors prefer to invest in bonds and deposits. Further, Grable and Lytton (2003) and Pak and Mahmood (2015) opined that risk-tolerant investors intend to invest in riskier investments such as stocks and forex, while risk-averse investors prefer safe or fixed income invests such as bonds and deposits. The positive impact of risk aversion implies that risk-averse investors have a favorable intention to invest in corporate bonds, while risk-tolerant investors do not have a less favorable intention to invest in Indian corporate bonds.

Further, the study examined the impact of AT, SN and PBC on behavioral intention. The study found that the attitude of the investor positively impacted intention. The research findings support the findings of Gopi and Ramayah (2007), Sondari and Sudarsono (2015), and Raut (2018). In addition, the study also found that subjective norms positively influenced intentions. Literature evidenced mixed findings. The research reaffirms the findings of Gopi and Ramayah (2007), Sondari and Sudarsono (2015), Sivaramakrishnan et al. (2016), Ibrahim and Arshad (2017), and Raut (2018), which found that social influence like media reports positively impacted investment intentions. However, the current study's findings do not support the previous research findings (Shanmugham & Ramya, 2012; Mahastanti & Hariady, 2014). Another important finding was that PBC significantly and positively impacted the intention; these results further support the findings of Gopi and Ramayah (2007), Cuong and Jian (2014), Raut (2018), Sivaramakrishnan et al. (2016),

and Ibrahim and Arshad (2017). This outcome is contrary to that of Sondari and Sudarsono (2015), who found that PBC failed to predict behavioral intentions. Taken together, these results suggest that a significant positive impact of attitude implies that favorable feelings towards investing in the corporate bond improve the behavioral intention to invest. Similarly, a significant positive impact of attitude suggests that a favorable or positive social influence by peers, friends, family members and media reports largely affect the intention to invest. PBC was found as a significant factor in predicting the intention. This suggests that investors' perception of their ability to invest is crucial compared to other factors.

The mediating role of attitude, subjective norms and PBC were analyzed between risk aversion and behavioral intention. The mediation analysis revealed that attitude, subjective norms and PBC partially mediated the relationship between risk aversion and intention. These findings accord with recent studies (Kautonen et al., 2009; Munir et al., 2019; Raut, 2020; Mulyono, 2021), indicating that AT, SN, and PBC partially mediated risk behavior and intention. At the same time, few studies found that attitude (Ali, 2011; Nandan & Saurabh, 2016; Rosique-Blasco et al., 2017; Zhang & Cain, 2017; Akhtar & Das, 2018; Lai, 2019) partially mediated and SN & PBC (Rosique-Blasco et al., 2017; Zhang

& Cain, 2017) did not mediate the relationship between risk aversion and intention. A positive and partial mediation of attitude, subjective norms and PBC between risk aversion and intention implies that risk aversion directly as well as indirectly influences behavioral intention through attitude, subjective norms and PBC.

Further, the study explored the moderating role of gender and financial literacy using PLS-MGA. The study found that the impact of risk aversion on investors' decision making did not differ based on gender. Gender did not moderate the relationship between risk aversion and intention. The results are inconsistent with the findings of Keller and Siegrist (2006), Barasinska et al. (2009), Montford and Goldsmith (2015), Dickason and Ferreira (2018), and Lawrenson and Dickason-Koekemoer (2020), which revealed that female investors are more risk-averse and choose the less risk associated investments than male investors. Moreover, the study found that financial literacy did not moderate the relationship between risk aversion and behavioral intention. These results were in line with the findings of Dinç Aydemir and Aren (2017) and Sadiq and Khan (2019). These findings suggest that, in general, gender and financial literacy neither strengthen nor weaken the association between risk aversion and intention.

CONCLUSION

The study investigated the impact of risk aversion on the behavioral intention applying the TPB. Additionally, mediation analysis of attitude, subjective norms and PBC, and multi-group moderating analysis of gender and financial literacy were conducted. The structural equation modelling revealed that risk aversion, attitude, subjective norms, and PBC significantly positively impact the investor's intention. The second major finding was that attitude, subjective norms, and PBC partially mediate the relationship between risk aversion and intention. Furthermore, the multi-group analysis revealed that gender and financial literacy did not moderate the association between risk aversion and intention.

Based on findings, this study suggests that a key policy priority should be to plan for the long-term development of the corporate bond market in India from an investor's perspective. To develop a favorable attitude towards the Indian corporate bond market, regulatory bodies and policymakers should regulate the transparent and liquid debt market. This ensures easy access of the information to the investor. Furthermore, to ensure easy access of the information to the investor, regulatory bodies and corporate houses should publish well-informed reports and media reports to create an affirmative perception towards the corporate bond market. To increase the investors' perception of their ability to invest in the corporate bond market, the government and policymakers can build a fair and transparent investment avenue, regulated trading mechanism, technological infrastructure, and tax concessions. Additionally,

corporate and regulatory bodies can develop attractive investment avenues like ETFs, increasing retail investors' participation. This study's scope was limited when evaluating the multi-group analysis of age and financial literacy. Hence, future research can explore other demographics such as age, education, and trading experiences. Additionally, longitudinal research needs to be carried out to examine the translation of the behavioral intention to the actual behavior of the investor.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Table A1. List of measurement scales

Constructs	Measurement items	Sources
Attitude	AT 1: Corporate bond investment is a good idea AT 2: Investing in corporate bonds is a wise choice AT 3: I like the idea of investing in corporate bonds.	Chen (2007)
Subjective norms	SN1: Many of my colleagues and friends invest in corporate bonds SN2: Those who have important influence on me think that I should invest in corporate bonds. SN3: People whose opinion I value would prefer that; I should invest in corporate bonds.	Taylor and Todd (1995)
Perceived behavioural control	PBC1: I know where to buy corporate bonds PBC2: I can identify profitable bonds easily PBC3: I can invest in favourable bonds conveniently	Raut et al. (2018)
Behavioural intention	BIT1: I invest in bond market frequently. BIT2: I encourage my friend and family to invest in corporate bond market BIT3: I will invest in bond market in near future	Taylor and Todd (1995)
Risk aversion	RA1: I am not willing to take risk while investing in bonds. RA2: I prefer a low risk/low return investment with a steady performance over an investment that offers higher risk/higher return. RA3: I prefer to remain with an investment choice that has known problems rather than take the risk trying a new investment choice that has unknown problems, even if the new investment choice has great returns RA4: I view risk in investment as a situation to be avoided at all cost.	Mayfield et al (2008) Akhtar et al. (2017)
Financial literacy	1. Suppose you had ₹ 100 in a savings account and the interest rate was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow? a. More than ₹ 102 b. Less than ₹ 102 c. exactly ₹ 102 d. Do not know. 2. Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After 1 year, how much would you be able to buy with the money in this account? a. More than today b. Exactly the same c. Less than today d. Do not know. 3. If interest rates rise, what will typically happen to bond prices? a. They will rise b. They will fall c. Constant d. Do not know. 4. Which of the following statements describes the main function of the stock market? a. The stock market helps to predict stock earnings b. The stock market results in an increase in the price of stocks c. The stock market brings people who want to buy stocks together with those who want to sell stocks d. None of the above e. Do not know 5. Which of the following statements is correct? If somebody buys the stock of firm B in the stock market: a. He owns a part of firm B b. He has lent money to firm B c. He is liable for firm B's debts d. None of the above e. Do not know 6. Which of the following statements is correct? If somebody buys a bond of firm B: a. He owns a part of firm B b. He has lent money to firm B c. He is liable for firm B's debts d. None of the above e. Do not know 7. Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return? a. Savings accounts b. Bonds c. Stocks d. Do not know	Van Rooij et al., (2009) Van Rooij et al. (2011)

Table A1 (cont.). List of measurement scales

Constructs	Measurement items	Sources
Financial literacy	8. Normally, which asset displays the highest fluctuations overtime? a. Savings accounts b. Bonds c. Stocks d. Do not know	Van Rooij et al., (2009) Van Rooij et al. (2011)
	9. When an investor spreads his money among different assets, does the risk of losing money: a. Increase b. Decrease c. Stay the same time d. Do not know	
	10. Stocks are normally riskier than bonds. True or false? a. True b. False c. Do not know	
	11. If the interest rate falls, what should happen to bond prices? a. Rise b. Fall c. Stay the same d. Do not know	