

Effect Of Past Behavioral Biases On Investment Decision Of Investors: An Extension Of The Theory Of Planned Behavior Model



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ABSTRACT

Purpose: The purpose of this research is to identify the factors that influence Investors' decision-making process. Individual investor incentives have been investigated using the TPB model of the Theory of Planned Behavior. There are three factors that go into TPB: one's attitude, another's subjective norms, and one's sense of agency over their own behavior. In this study, TPB model have been extended by adding one more variable that is Past Behavior (PB).

Design/Methodology: A total 105 respondents were given response to Structured Questionnaire. To analyze and evaluate the data set of respondents, both descriptive and inferential analysis was performed in study. Descriptive analysis was performed using SPSS 20.0, and inferential analysis using Structured Equation Modeling (SEM) was performed in AMOS 20.0.

Findings: According to the results of this research, AT, SN, and PB all had a considerable impact on individual investors' intents, but PBC had no effect. Overall, study suggest that Financial professionals, policymakers and other stakeholders should consider the importance of investors' AT, SN and PB when designing interventions or strategies to influence investors' intentions. While PBC may not have a direct impact intentions based on the current findings.

Originality: This study contributes to the behavioral finance literature by extending the Theory of Planned Behavior (TPB) through the incorporation of Past Behavior (PB) as an additional explanatory variable in the context of individual investors' decision-making. This extension of TPB enhances its predictive power and offers practical insights for financial professionals and policymakers seeking to design more behaviorally informed investment strategies.

Keywords: TPB, Investors, Attitude, Subjective Norms, Perceived Behavioral Control, Past Behavior

JEL Classification: G10, G11, G40, G41

1. INTRODUCTION

Since the beginning of Homo economicus, people have been practicing the art of investing. Long-distance trading's risk/reward choices might be seen as the oldest form of investing. (Stephen and Andrew). A significant level of knowledge is required to participate in the worldwide economy in the age of the knowledge economy and the information explosion. Such information can help people amass personal riches and financial freedom, as well as increase a country's economic might (Hayhoe, Leach, & Turner, 1999). Making investment decisions is a complicated process that takes into account a number of variables, including financial objectives, risk tolerance, and market trends. Individual investors' actions and past experiences, however, can also have a big impact on how investment decisions are made. These cognitive biases, emotional considerations, and heuristics may affect investment decisions, resulting in less-than-ideal outcomes.

The extent to which behavioral theory impacts investment decision making is debatable. Previous studies on the topic of investment behavior have

revealed varying results. "Therefore, further in-depth research is required to determine the impact of applying the planned behavior theory to investors' monetary objectives. The Theory of Reasoned Action (TRA) was first suggested by Fishbein and Ajzen (1975) and serves as a foundation for research into human behavior. Ajzen's (1985) Theory of Planned Behavior (TPB) is an extension of this theory that attempts to predict people's activities.

The Theory of Planned Behavior (TPB) is a well-liked theoretical framework for examining the ways in which individuals' future intentions are influenced by their attitudes, subjective norms, and perceived behavioral control." This study extends the TPB model by taking into account people's inherent prejudices against new situations by examining their past behaviors (PB). Rajdeep Kumar Raut (2020) argues that including past behavioral biases into the TPB model makes it more accurate. The way one behaved in the past has a significant impact on how they act now. One's past actions are a major factor in shaping their present actions, which has been recognized as a

fundamental feature of human behavior (Kidwell & Jewell, 2008).

2. REVIEW OF LITERATURE

2.1 *The Theory of Planned Behavior & its implication in financial decision:*

Icek Ajzen (1985) proposed TPB in his chapter "From intentions to actions: A theory of planned behavior". Martin Fishbein and Ajzen's 1980 theory of thought experiment (TRA) serves as the theoretical basis for TPB. In return, TRA made several guesses about people's opinions and how they could change over time. According to TRA, a person's behavior is solely influenced by that person's attitude toward behavior and their own subjective norms. Attitudes and subjective norms influence both the decision to act and the likelihood that action will be taken. Separating TPB from TRA, Ajzen (1985) emphasized a third critical variable: perceived behavior control. What we call "perceived behavioral control" refers to how confident an individual feels in his or her ability to carry out a certain behavior. A person's sense of agency over his or her own behavior is central to the idea of "perceived behavioral control." Several research have shown that TPB is a valid and helpful tool for analyzing and forecasting human behavior over the years (Husin & Alrazi, 2017; Kovac, Cameron, & Høigaard, 2016).

According to Ratih, Hadri, Hanafi (2021), Muslims' intentions to buy Islamic stock are significantly affected by investors' attitudes, subjective norms, and perceived behavioral control. Another validated new external variable in TPB is religious affiliation, which can be used to gauge Muslim interest in purchasing shares of Islamic companies. Specifically focusing on Mutual Fund Product Investment, Safira (2020), expand TPB model and add financial literacy in their research. The outcome shows that one's outlook is the strongest predictor of whether or not they will make a future investment in a mutual fund. In addition, Phan and Zhou (2014) discovered that one's investing outlook, subjective norm, and sense of behavioral control all play significant roles in shaping one's purpose to invest. Overconfidence, overoptimism, the psychology of risk, and herd mentality are all factors with solid empirical support according to this study. The study found that all psychological factors have significant effect between attitude & behavior intention of investors.

Another study focusing on Stock investment decision by Reza & Indri (2018), investors' attitudes toward risk do not influence their intentions to invest, but investors' attitudes toward subjective norms, perceptions of behavior control, overconfidence, excessive optimism, and herd behavior do. Rahies, Ali's (2022) Investing objectives are highly influenced by one's attitude, subjective norms, perceived behavioral control, and

risk tolerance, according to research on risk tolerance and financial literacy based on the TPB model. Their results also suggest that raising one's level of financial education can boost one's intent to invest in the financial markets.

2.2 *Past Behavior & Financial decision and Intention to Actual Behavior:*

Past behavior of investors refers to the actions, decisions, and patterns of behavior that investors have exhibited in the past when it comes to their investment choices and strategies. It encompasses various aspects such as investment styles, risk tolerance, investment horizon, portfolio allocation, and reaction to market fluctuations, among others. Studying past behavior of investors is important in understanding their investment tendencies and predicting their future investment behavior.

Aarts et al. (1998) state that "because of frequent performance in similar situations in the past, these mental representations and the resulting action can be automatically activated by environmental cues" (p. 1359). In other words, people's characteristic behaviors are preserved while under the impact of such PB. PB has had extensive use as a predictor of behavior and intent (Kidwell and Jewell, 2008; Kovac et al., 2016; Sandberg, et al., 2016).

Specifically focusing on invest in medium/high risk financial product by Doriana, Gino & Maria (2016) if retail investors have experience with a similar product, they are more likely to invest in a medium- or high-risk financial instrument. When trying to understand what motivates people to invest, this study uses PB as a predictor variable.

3. "OBJECTIVE AND HYPOTHESIS OF THE STUDY

3.1 *Objectives:*

- To determine the significant impact of original components of TPB model to predict the intention of Indian Investors.
- To study Past Behavior of investors to predict the actual intention of Investors.

3.2 *Hypothesis Of The Study:*

Based on existing literature, we introduce following hypothesis concerning the impact of TPB model on the intention to behavior:

H1: Attitude has a positive significant impact on the investment intention of investors.

H2: Subjective Norms have a positive significant impact on the investment intention of investors.

H3: Perceived behavioral control has a positive significant impact on the investment intention of investors.

H4: Past Behavioral Bias has a positive significant impact on the investment intention of investors.

4. RESEARCH METHODOLOGY:

4.1 *Population, Sampling & Data Collection:*

Investors were polled using a survey format to acquire data for the study. We started with a simple random sample and then expanded it using the snowball technique. In order to gather information about the state of Gujarat, the cities of Ahmedabad and Gandhinagar were visited. The respondents were normal investors. In total, 105 respondents were given response of survey.

4.2 Measures

The TPB model was tested in an exploratory study with primary data. It's a survey that you fill out on your own time. Items used in the evaluations came from the research of many authors. There were two sections to the questionnaire. The bulk of the survey is devoted to questions about the age, sexual orientation, marital status, level of education, current occupation, and monthly income of the respondent. The next section discusses everything having to do with the genesis of attitude, abstract norms, social control, habitual behavior, and business objectives. A Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) is used to evaluate the entire system.

4.3 Empirical Test

During the evaluation, both direct and indirect tests were performed to analyze the data gathered from the respondents. The software packages used were SPSS 20.0 for the evidential analysis and AMOS 20.0 for the inferential analysis (organized condition demonstration (SEM)). For Inferential Analysis, a Two-Stage SEM was carried out, with Corroborative Element Investigation (CFA) through an Estimation Model being carried out to ensure the Unwavering Quality and Authenticity of the Idle Construction in the Core Stage. The next stage was testing the speculative hypothesis via an examination via a structured condition model.

5. DATA ANALYSIS

Construct	Mean	Standard Deviation
Attitude (AT)	3.51	1.35
Subjective Norm (SN)	3.16	1.05
Perceived Behavioral Control (PBC)	3.02	1.04
Past Behavior (PB)	3.19	1.10
Intention (INT)	3.27	1.11

Table 1: Descriptive Measure

5.2 Measurement Model

To validate multi-functional model and to evaluate Reliability and Validity of latent construct, CFA was conducted using AMOS. The overall consistency of constructs is given in Table 2. Construct reliability assessment allows the evaluation of the extent to which a variable or set of variables is consistent in what it intends to measure (Straub, Boudreau, &

5.1 Descriptive Statistics

5.1.1 Demographic Profile:

After sorting through the data, we were able to piece together the following demographic profile of respondents in the three cities of Gujarat (Ahmedabad, Gandhinagar, and Mehsana). About 55% of those who participated were male, while 45% were female. Of the people who filled out the survey, just over half were in their twenties and thirties; another 28% were in their thirties and forties; 3% were in their forties and forties; 9% were in their fifties and sixties; and 1% were well into their sixties. The majority of participants were in the younger age range. For marital status of respondents, 56% of respondents were unmarried and 44% of respondents were married. In Variable of Education, majority of respondents had Post graduation degree, that is, 60%; 28% of respondents had Graduation degree; 7% of respondents had School Education and 6% of respondents had PhD degree. In Occupation, majority of respondents were from Salaried, that is, 60%; 21% of respondents were from self-employed, 10% of respondents were from Professional and 19% of respondents were from others including House wives, retired person etc.

5.1.2 Descriptive Measures:

They used the TPB Model's attitudes, subjective norms, perceived behavioral control, prior behaviors, and intended actions. The poll used a Likert scale with five options ranging from "Strongly Disagree" to "Strongly Agree" to determine the extent to which respondents were willing to invest. The average was determined by arithmetically averaging the parts of each structure. As shown in Table 1, mean value of all the constructs are above 3, which means all the respondents were from neutral to strongly agree for all the statements of Constructs.

Gefen, 2004). Construct reliability is assessed through Cronbach's Alpha and Composite Reliability (CR). Both values are interpreted using the guideline offered by Nunnally and Bernstein (1994) who suggest 0.7 as a benchmark for a modest reliability applicable.

In Table 2, value of Cronbach's Alpha is from 0.845 to 0.924 and value of composite Reliability (CR) is

from 0.842 to 0.926. Both the value of Cronbach's Alpha and CR is satisfying the benchmark value of Nunnally and Bernstein (1994) which shows high reliability of Constructs.

Construct Validity is the measure of how well the items selected for the construct actually measure the construct. Construct Validity is established through two forms of validities, Convergent Validity and Discriminant Validity. Convergent validity refers to the degree to which multiple measures of construct that theoretically should be related, are in

fact related (Gefen, Straub, & Boudreau, 2000). To assess Convergent Validity, Standardized Factor Loading (SFL) and Average Variance Extracted (AVE) in Table 2 is considered. The value of SFL ranging from 0.705 to 0.931 satisfied the required benchmark of 0.70 or more (Chin 1997). Also the recorded value of AVE fulfilled the recommendation for the value of 0.5 or higher (Hair et al., 1998). All the values ranging from 0.601 to 0.807 indicated good convergent validity of all the latent constructs.

Constructs/Key Items	Cronbach's Alpha	Standardized Factor Loading (SFL)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Construct 1: Attitude AT1 AT2 AT3	0.924	0.901 0.862 0.931	0.926	0.807
Construct 2: Subjective Norm SN1 SN2 SN3	0.845	0.880 0.826 0.708	0.848	0.653
Construct 3: Perceived Behavioral Control PBC1 PBC2 PBC3 PBC4 PBC5	0.884	0.856 0.728 0.829 0.746 0.705	0.882	0.601
Construct 4: Past Behavior PB1 PB2 PB3 PB4 PB5	0.904	0.840 0.872 0.796 0.790 0.845	0.917	0.688
Construct 5: Intention INT1 INT2 INT3	0.899	0.825 0.900 0.865	0.898	0.746

Table 2: Measurement Model

Discriminant validity measures how distinctively one construct stands out from another. (Anderson & Gerbing, 1988). While Fornell & Larcker's (1981) Despite the widespread acceptance of the recommendation that shared variance be used to measure discriminant validity, newer studies have begun to doubt the test's sensitivity in identifying problems with discriminant validity between components. (Henseler et al. 2015). The heterotrait - monotrait ratio of correlation (HTMT) approach was introduced to improve the assessment of discriminant validity between components. The HTMT method analyzes the degree of similarity between two different constructions in a person. If the value of the HTMT is less than 0.90, discriminant validity between the two reflective notions has been established. As reported by (Henseler, Ringle, & Sarstedt, 2015). For discriminant validity, we calculated the HTMT ratio. All values in Table 3 are less than 0.90, indicating that there is no association between latent components. This indicates reliable discriminant validity between the constructs.

	AT	SN	PBC	PB
AT				
SN	0.82			
PBC	0.73	0.8		
PB	0.86	0.83	0.85	

Table 3: Discriminant Validity (HTMT Ratio)

5.3 Structural Model:

After evaluating the reliability, validity and model fit of measurement model, we further proceed for evaluation of Structural Model in order to test the proposed hypothesis. To do so, we employed Structural Equation Modeling (SEM) using AMOS version 20.0. The SEM technique is the combination of factor analysis and regression for examining the interrelationship among constructs. The Structural model is basically a path model which estimates the relationship between the independent and dependent variables. The structural model for the present study contains 5 latent constructs. To

assess the model fit, we use various model fit indices like Relative or Normed Chi-square (CMIN/DF), Tucker-Lewis Index (TLI), Comparative fit Index (CFI), Incremental Fit Index (IFI), Root Mean Square Error Of Approximation (RMSEA) and Standardized Root Mean Residual (SRMR). Table 4 exhibit the result of Structural Model fit Indices. As shown in Table 4, all the model fit indices for the structural model fall within the acceptable value (CMIN/DF = 1.939, TLI = 0.956, CFI = 0.913, IFI = 0.915, RMSEA = 0.05, SRMR = 0.04), indicating that the structural model fits well.

Fit Indices	Obtained Value	Recommended Value	References
CMIN/DF	1.939	<3	Browne and Cudek (1992); Wheaton et al. (1977)
TLI	0.956	> 0.94	Bagozzi and Yi (1988)
CFI	0.913	> 0.90	Hu and Bentler (1999)
IFI	0.915	> 0.95	Bagozzi and Yi (1988)
RMSEA	0.05	< 0.08	Browne and Cudek (1992)
SRMR	0.04	< 0.08	Hu and Bentler (1999)

Table 4: Model Fit Indices of Structural Model

5.3.1 Structural Model: Path Analysis and Hypothesis Testing

“Path Analysis was performed in the second stage of SEM to investigate the relationship between independent and dependent variables. It was hypothesized that there would be a four-way causal relationship between PB, the TPB variables (AT, SN, and PBC), and investment intentions. The relationship between investors' intents and elements like attitude, subjective norms, perceived behavioral control, and past behaviors was studied. Supporting H1, a positive and statistically significant relationship was found between AT and Intention ($\beta= 0.27, t = 2.014, p 0.05$). Subjective

norms' (SN) influence on intent was positive and statistically significant ($\beta= 0.85, t = 2.268, p 0.05$), lending credence to hypothesis 2. Therefore, H3 is not supported because the effect of PBC on intention was Positive but Insignificant ($\beta= 0.24, t = 1.308, p = 0.191$). Positive and significant ($\beta = 0.47, t = 2.155, p 0.05$) effects of prior behavior on future intent were found, lending credence to hypothesis 4. It demonstrates that investors are positively motivated to invest due to their own favorable AT, societal influence, and past behavior. All the results have shown in Table 5.

Hypothesis	Path	Coefficient	Critical Ratio (CR)	P - value	Result
H1	AT - INT	0.27	2.014	0.044	Accepted
H2	SN - INT	0.85	2.268	0.023	Accepted
H3	PBC - INT	0.24	1.308	0.191	Rejected
H4	PB - INT	0.47	2.155	0.031	Accepted

Table 5: Result of Structural Model & Hypothesis Testing”

6. RESULT & DISCUSSION

To examine the Intention of Individual Investors,

effect of AT, SN, PBC and PB on the Intention of Investor were analyzed and hypothesized. The

purpose of this research was to use the TPB model's additional variables to analyze how PB influences the investment intentions of individual consumers. The impact of PB biases has been used by many authors, thus it is crucial to evaluate the TPB model's predictability after including this component. Perceived behavior control was not shown to have any substantial effect on individual investors' intentions, while attitude, subjective norms, and past behavior were all found to have positive and significant effects. Consistent with the findings of Raut (2020), we find that subjective norms have a significant role in shaping people's behavior. This demonstrates that investors routinely seek the advice of their peers before making major decisions and that they look to experts for clues about the best market possibilities. Da Costa et al. (2019) find that this finding lends credence to the idea that investors in emerging markets follow a strategy that is informed by available data. Furthermore, the lack of a discernible impact of PBC on Intention shown that, Indian Investors lack full discretion over their choice. This may be attributable to a deficiency in the availability of an effective investment platform and an understanding of the many investment options already on the market. This result of the study is in the line of the findings of Paramita, Isbanah (2018).

To further develop the TPB model, the variable Past Behaviour (PB) was added to the original set of variables. Investors' PB has been employed as a significant dimension in numerous previous behavioral research (Knussen et al., 2004, Raut, 2020). The research reveals that investors' past actions have a favorable and significant effect on their future decisions. It demonstrates that the likelihood of making a future investment decision depends heavily on prior outcomes, suggesting that investors may be prejudiced toward an anchor or any attribute or even just a comparable environment.

7. CONCLUSION

Investors' behavior refers to the actions, decisions and patterns of Individuals or entities engaged in financial markets or investment activities. Investors often exhibit both rational and irrational behavior, as they seek to maximize their returns, manage risks and achieve their financial objectives. This study provides insight into the minds of Indian investors. The study's conclusions have significant theoretical and practical implications for many people and fields.

The study's key contribution is PB. The findings go beyond what is assumed by the TPB model and point to the importance of Past Behaviour in influencing investors' decisions.

Overall, study suggest that Financial professionals, policymakers and other stakeholders should

consider the importance of investors' AT, SN and PB when designing interventions or strategies to influence investors' intentions. While PBC may not have a direct impact intentions based on the current findings. But it is essential to stay updated with future research in this area to fully understand its role in influencing investors' behaviour.

Conflicts Of Interest Declaration

All authors declare that they have no conflicts of Interest.

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