Behavioral Biases Influencing Investment Decisions of Life Insurance Investors

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ABSTRACT

The purpose of this paper is to validate the scale of behavioral biases and investment decisions concerning investors of life insurance and to evaluate the impact of behavioral biases on investment decisions made by them. The study is based on a questionnaire survey by including the investors of life insurance residing in Bihar (India) using a convenient sampling technique. The collected data were analyzed using SmartPLS. The study found that the scale used to measure behavioral biases and investment decisions of investors of life insurance were valid and behavioral biases have a positive and significant impact on investment decisions of life insurance investors. The study found that the investors are behaviorally biased while making investment decisions related to life insurance and only four biases are included in the study. The study contributes to the academia of behavioral aspects of life insurance investors. The study helps in understanding the mindset of investors investing in life insurance. This study contributes to the limited study undertaken in the area of behavioral aspects of life insurance investors. It also contributes to the lacking academe of life insurance.

Keywords: Decision-making, Psychological Biases, Insurance
JEL Classifications: D91, G11, G22, G41

1. INTRODUCTION

The uncertainty in life gives rise to an unexpected loss that will impact the quality of people's life. To tackle these losses insurance is an instrument that establishes certain small losses instead of uncertain losses (Salim, 1989). Life insurance is one of the most important types of insurance that aims to bear individuals' unexpected financial losses which are a result of the risk of living too long or living too short (Salim, 1989).

Investors face difficulty while selecting the life insurance policies to invest in as it is a complex process (Kunreuther and Pauly, 2015). The earlier statement is also supported by (Tversky and Kahneman, 1981) explaining that individuals do not always take rational decisions, and generally, it is found that their behavior is influenced by irrationality. The influence of irrational patterns in the behavior of individuals gives rise to the rapid development

of the field of Psychology related to financial behavior and evolves new field called Behavioral Finance (Ackert and Deaves, 2010).

The study has adopted a 16-item scale, measuring behavioral biases and a 4-item scale, measuring investment decisions of life insurance investors from various previous studies (Menkhoff et al., 2006; Shusha and Touny, 2016; Jain et al., 2019; Raut et al., 2018; Chandra et al., 2017; Ritika and Kishor, 2020) and modified the scales in terms of life insurance. The study contributes to the literature on behavioral aspects of life insurance. In the study, we have four constructs for the independent variable (availability bias, confirmation bias, conservatism bias, and loss-aversion bias) and one construct for the dependent variable (investment decisions). The study deals with the validation of the scales of behavioral biases and investment decisions and also evaluates the impact of behavioral biases on investors' decisions.

We have organized the rest of the paper as follows: we started by discussing the previous literature available in this area then we explain the objectives of the study and formulate the hypotheses. We then unveil the research methodology section and further analyze the data and interpret the findings of the study. Finally, we concluded the paper and discuss the limitations of the study and the scope for future research.

1.1. Objectives of the Study
I.   To validate the behavioral biases scale influencing the investment decisions of life insurance investors; and
II. To analyze the impact of behavioral biases on investment decisions of investors of life insurance.

1.2. Hypothesis of the Study
1. Ho: There is no significant impact of behavioral biases on investment decisions of investors of life insurance.

The four hypotheses inducted for this study are as follows:
A. H_o: There is no significant impact of availability bias on investment decisions of investors of life insurance.
B. H_o: There is no significant impact of confirmation bias on the investment decisions of investors of life insurance.
C. H_o: There is no significant impact of conservatism bias on investment decisions of investors of life insurance.
D. H_o: There is no significant impact of loss-aversion bias on investment decisions of investors of life insurance.

2. LITERATURE REVIEW

The literature review section is further classified into four parts:

2.1. Life Insurance Market in India
The life insurance industry in India is expected to increase at a CAGR of 5.3% between the years 2019 and 2023, IBEF (India Brand Equity Foundation, 2022). The life insurance industry is expected to increase in India by 14-15% annually for the next 3-5 years, IBEF (India Brand Equity Foundation, 2022). Despite this impressive profile, this sector lacks academic presence related to the investment behavior of life insurance investors.

2.2. Behavioral Biases
The application of psychological, financial, and economic principles is described as behavioral finance (Olsen, 1998). The rationality of investors was confined by cognitive and emotional factors (Tversky, 1995). The continuous dependence on these tools while making investment decisions, eventually go with various behavioral biases to achieve their financial objectives (Tversky, 1995). These biases were broadly categorized into cognitive biases and emotional biases. The biases used in the present study are availability bias, confirmation bias and conservatism bias of cognitive biases, and loss-aversion bias of emotional bias (Ritika and Kishor, 2020).

2.3. Investment Decisions
Individuals practice decision-making to judge their ability of taking correct decisions (Gill et al., 2018). Decision-making is a complex process as it can be sometimes based on the custom or habits of investors (Weber, 1968). Therefore, investors have to take their decisions very cautiously.

2.4. Behavioral Biases and Investment Decisions
Financial academics and behavioral psychologists have identified various types of behavioral biases associated with investors' investment decisions (Baker et al., 2019). The understanding of individual investment decisions requires the understanding of various types of behavioral biases that are related to the decision-making process (Sahi et al., 2013). The study found the existence of availability bias in Indonesian investors while making decisions related to life insurance and also found availability bias as the most dominant aspect (Kurniawan and Murhadi, 2018). Availability bias and confirmation bias affect the investment decision-making process of life insurance investors under uncertainty with limited available information (Sum and Nordin, 2018). No effect of loss-aversion bias was found on investment decisions of investors (Ainia, 2019), whereas contradictory results were found in the study as loss-aversion bias influences the investment decisions of investors in the Indian stock market (Kumar and Babu, 2018). No relation was found between conservatism bias and investment decisions of investors investing in securities (Raheja and Dhiman, 2018). Confirmation and loss-aversion biases are also found among the investors investing in bitcoins and these biases exist at each stage of investing (Hidajat, 2019). Availability bias is one of the most prominent biases among investors investing in local property and loss-aversion bias does not show significant influence on the investment decisions of property investors (Pandey and Jessica, 2018).

2.5. Research Gap
There is a plethora of literature available related to behavioral biases and investment decisions in respect of the stock market, real estate, cryptocurrency, mutual funds, etc. but the emotional and social perspective of investors investing in life insurance was often ignored and a huge component of behavioral decision-making in this area is left undiscovered. Much of the behavioral research is available in the stock market (Kishore, 2006). This study contributes to the limited research in the behavioral aspect related to investment in life insurance by examining the influence of behavioral biases on investment decisions of life insurance investors. This study contributes to the lacking academe in the life insurance market in India.

3. RESEARCH METHODOLOGY

3.1. Questionnaire Design
The study focuses on behavioral biases (availability, confirmation, conservatism, and loss-aversion) of investors investing in life insurance. After studying the extensive literature review 16 items related to behavioral biases and 4 items related to investment decisions if individual investors are taken into consideration, and were modified in terms of life insurance policies. The study is quantitative and is based on primary data which is a better indicator for measuring the behavior of investors than secondary data (Lin, 2011). It is causal research. The questionnaire design used in the study was divided into three sections viz., Section 1 holds information related to the demographic profile of investors, section 2 holds questions related to investment decisions using a five-point Likert scale i.e., (1-5) starting
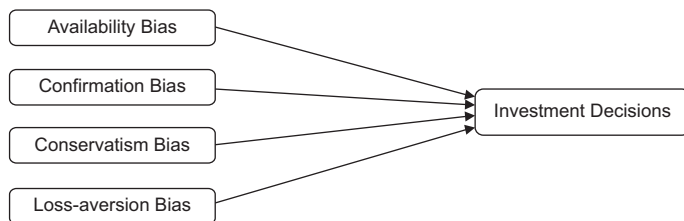
from strongly disagree to strongly agree and section 3 describes questions of behavioral biases using five-point Likert scale where 1 represents strongly disagree, 2 represents disagree, 3 represents neutral, 4 represents agree and 5 represents strongly agree.

3.2. Sampling and Data Collection
The sampling frame of the study constituted individual investors investing in life insurance in Bihar (India). The data was collected using a convenient sampling technique. The size of the population is infinite so, the sample size is calculated using the Cochran formula of the infinite population which is 384 (Cochran, 1977). To check the internal consistency and reliability of the scale, we conducted pilot testing with 40 respondents. Finally, 407 data was collected for the study.

3.3. Conceptual Framework
The research model has 5 constructs with multiple items, therefore, before testing the hypotheses of the study the validation of the instrument was tested by measuring construct validity using convergent validity and discriminant validity (Hair et al., 2014) and construct reliability using Cronbach's alpha and composite reliability (Pandey and Jessica, 2019). The validation of the instrument was executed using SmartPLS and the proposed hypotheses of the study were tested using structural equation modeling (SEM) through SmartPLS.

4. DATA ANALYSIS AND INTERPRETATION

4.1. Demographic Profile of Respondents
Table 1 shows the characteristics of the respondents. The study constituted a majority of the male sample than the female sample. The majority of respondents belong to the age group of (26-35) and (18-25) years comprising 34.60% and 34.40% of the population respectively. Around 41.80% of the population earns income below 2.5 lacs. And more than half of the populations i.e., 52.30% were graduates. The reason behind consisting majority of the male sample is that the Indian society is a male-dominating society and most of the decisions related to investment are taken by male members of the families (Baker et al., 2019).

Before applying any statistical test, the normality of the data needs to be tested. The Kolmogorov-Smirnov test was applied as the size of the sample used in the study was <1,000 and the $p < 0.05$ which reject the test of normality. As the data were not normally distributed, we used SmartPLS to validate the scales used to measure behavioral biases and investment decisions of investors of life insurance as well as the impact of behavioral biases on investment decisions of life insurance investors' using partial least square structural equation modeling (PLS-SEM) path model.

Table 1: Demographic profile of respondents

Demographic factors	Values	Frequency	Percent
Gender	Male	272	66.8
	Female	135	33.2
	Total	407	100.0
Age (in years)	18-25	140	34.4
	26-35	141	34.6
	36-45	65	16.0
	46-55	30	7.4
	Above 55	31	7.6
	Total	407	100.0
Annual Income (in Rs.)	Below 2.5 lac	170	41.8
	2.5-5 lac	121	29.7
	5-7.5 lac	58	14.3
	7.5-10 lac	38	9.3
	Above 10 lac	20	4.9
	Total	407	100.0
Educational qualification	Matriculation	11	2.7
	Intermediate	57	14.0
	Graduate	213	52.3
	Post graduate	118	29.0
	Doctoral degree	8	2.0
	Total	407	100.0

Firstly, we tested the measurement model to know the reliability and validity of the scale. After that, the structural model was tested to evaluate the impact of behavioral biases on investment decisions of investors of life insurance.

4.2. Measurement Model Assessment
The study is based on the reflective measurement model. No items were removed from the analysis because of low factors loading < 0.6 (Gefen and Straub, 2005). To examine the validity of the instrument and to test the hypotheses through path coefficient in structural equation modeling, we have to analyze the following: (a) indicator reliability; (b) internal consistency; (c) convergent validity; and (d) discriminant validity to ensure that the values are up to the mark to further move (Wong, 2013; Hair et al., 2006).

To test the reliability and internal consistency among items of the construct, this study used Cronbach's alpha and composite reliability. The values of Cronbach's alpha of each construct were greater than.70 which is within the acceptable range (Sekaran, 2000) and all the values of composite reliability were also higher than the acceptable value of.70 (Wasko and Faraj, 2005). The study also passed the convergent validity as the Average Variance Extracted (AVE) is greater than.50 (Fornell and Larcker, 1981). Table 2 represents the results for construct reliability and validity along with factor loading. We have tested discriminant validity by comparing correlation among the latent variables with the square root of AVE and found acceptable results (Fornell and Larcker, 1981); and also checked the heterotrait–monotrait ratio of correlations (Henseler et al., 2015), with values below the threshold of 0.85. Therefore, discriminant validity was established in the study (Table 3). Hence, the study attained all the reliability and validity tests and show that the scales of behavioral biases and investment decisions are valid (Figure 1).

4.3. Structural Model
The structural model represents the relationships (paths) between the constructs of the proposed model of the study. The goodness of the model is determined by the strength of the structural path
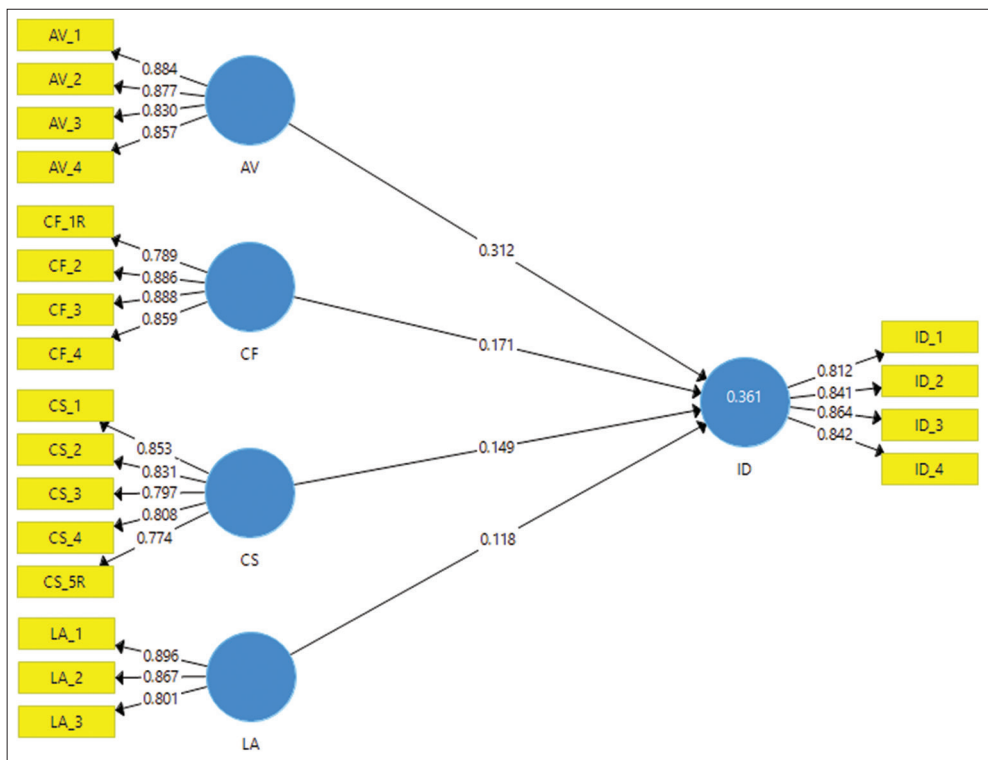
Figure 1: Model of the study

Table 2: Items loading, construct reliability, and convergent validity

	Item loading (Λ)	Alpha (α)	CR	AVE
AV_1	0.884	0.885	0.921	0.743
AV_2	0.877			
AV_3	0.830			
AV_4	0.857			
CF_1R	0.789	0.879	0.917	0.733
CF_2	0.886			
CF_3	0.888			
CF_4	0.859			
CS_1	0.853	0.872	0.907	0.661
CS_2	0.831			
CS_3	0.797			
CS_4	0.808			
CS_5R	0.774			
ID_1	0.812	0.861	0.905	0.706
ID_2	0.841			
ID_3	0.864			
ID_4	0.842			
LA_1	0.896	0.819	0.891	0.732
LA_2	0.867			
LA_3	0.801			

Table 3: Discriminant validity

	AV	CF	CS	ID	LA
AV	*0.862*	0.734	0.509	0.629	0.576
CF	0.651	*0.856*	0.426	0.536	0.385
CS	0.449	0.380	*0.813*	0.470	0.550
ID	0.549	0.471	0.409	*0.840*	0.467
LA	0.499	0.339	0.466	0.402	*0.855*

Statistics along the diagonal in bold and italics represent the square root of AVE. Below the diagonal values are the correlation between the constructs and above the diagonal values were the heterotrait-monotrait ratio of correlation.

AV: Availability Bias, CF: Confirmation Bias, CS: Conservatism Bias, LA: Loss-aversion Bias, and ID: Investment Decisions

Table 4: R² table

	Path coefficient	Standard deviation	T value	P values
ID	0.361	0.064	5.621	0.000

Table 5: Hypothesis testing

	Path coefficient	T value (bootstrap)	P values
H1a: AV -> ID	0.312	5.173	0.000
H1b: CF -> ID	0.171	2.884	0.004
H1c: CS -> ID	0.149	2.270	0.023
H1d: LA -> ID	0.118	2.136	0.033

and it is determined by the R^2 Value of the dependent variable (Peñalver et al., 2018). The R^2 Value should be equal to or over 0.1 (Falk and Miller, 1992). Table 4 shows the value of R^2 is.361 which represents that the model is moderate or there is a moderate effect of (availability, confirmation, conservatism, and loss-aversion) biases on investment decisions (Hair et al., 2013). Further for the assessment of goodness of fit, various hypotheses were tested to ascertain the significance of the relationship (Table 5). H1a evaluates whether the availability bias

has a significant impact on investment decisions and, the results revealed that the availability bias has a significant and positive impact on investment decisions ($\beta = 0.312$, t = 5.173, P = 0.000). H1b examines whether the confirmation bias impacted investment decisions and results revealed that there is a positive and significant impact of confirmation bias on investment decisions ($\beta = 0.171$, t = 2.884, P = 0.004). The study also rejected H1c and found that the conservatism bias has a significant and positive impact on investment decisions of investors of life insurance ($\beta = 0.149$,

t = 2.270, P = 0.023). The study also rejects H1d as the result found a significant and positive impact of the loss-aversion bias on investment decisions (β = 0.118, t = 2.136, P = 0.033). Hence, all the hypotheses of the study were rejected, and the results found that behavioral biases have a significant and positive impact on investment decisions.

5. CONCLUSION

The study contributes to the limited literature in the academe of life insurance by assessing the impact of behavioral biases of investors on investment decisions in life insurance. The study also validated the scales of behavioral biases and investment decisions in terms of Life insurance investment. Findings of the study show that Investors investing in life insurance are biased while making their investment decisions. Life insurance investors show the same type of behavior as other investors investing in different avenues like stock, mutual funds, pension funds, gold, real estate, Cryptocurrencies, etc. Findings of the study show that there is a significant and positive impact of all behavioral biases (availability, confirmation, conservatism, and loss-aversion) on the investment decisions of life insurance investors contrary to the previous results in respect of investment in securities and real estate. No effect of conservatism and loss-aversion were found on investment decisions of investors (Raheja and Dhiman, 2018); (Pandey and Jessica, 2018) whereas some previous studies also support the finding of the study (Kumar and Babu, 2018); (Hidajat, 2019) in terms of stock investment. As life is uncertain, and selecting the best policy to tackle losses on the happening of an uncertain event is a complex process, Investors have to deal with it cautiously. This study helps various types of investors to make aware of the biases they have gone through while making investment decisions, which helps them to improve their investment strategies and make rational decisions. This study helps life insurance companies in understanding the behavior of investors, and promotes insurance awareness programs to remove these biases.

This research study has certain limitations. Firstly, the data collected for the study has been in the context of Indian life insurance investors who invest in life insurance especially from Bihar (India) therefore, the model should be replicated in other states of India also. Secondly, in this study, only four biases (availability, confirmation, conservatism, and loss-aversion) have been tested, and further research needs to be undertaken by including more biases to understand investors' behavior minutely. Further, the research can also be undertaken by using this result and comparing it across the world.

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