Behavioural Biases in Investment Decision Making: A Research Study on Individual's Beliefs

*Udayan Das
**Shakti Ranjan Mohapatra

*Professor, Asian School of Business Management, Bhubaneswar &
Doctoral Research Scholar, Utkal University
**Principal, College of IT & Management Education, Bhubaneswar &
Dean, Faculty of Management Studies, Biju Patnaik University of Technology, Odisha

Introduction

Belief bias is the tendency to judge the strength of arguments based on the plausibility of their conclusion rather than how strongly they support that conclusion. In other words, if people agree with a viewpoint, they are inclined to believe that the process used to obtain the results must also be correct. The validity of an argument is different from the truth of its conclusion: there are valid arguments for false conclusions and invalid arguments for true conclusions. Hence it is an error to judge the validity of an argument from the plausibility of its conclusion. This is the reasoning error known as belief bias. The belief bias effect refers to the results that happen when an individual's own values, beliefs, prior knowledge, etc. affects or distorts the reasoning process through the acceptance of invalid arguments or data. This can happen when an observer assumes ahead of time that they know what the results of an experiment will be and uses that belief to distort the results. In case of investment decision making, it is generally observed that individuals are influenced by their beliefs which ultimately distort the reasoning process. It may result in a wrong decision when the belief is far from reality. In this research study, it is examined whether investment decision making is influenced by individual's beliefs or not.

Previous Studies & Scope of Research

Most of the investors are perseverant in their beliefs. As observed by Lord, C., Ross, L., and Lepper, M. (1979), it is often found when investors are convinced that a particular stock is going to perform well, they hardly change their mind. It refers to a type of selective perception that emphasises ideas that confirm individual's beliefs, while devaluing whatever contradicts individual's beliefs. It is well-known as Confirmation bias.

Evans, Barston and Pollard (1983) found that respondents showed a tendency to reject valid arguments with unbelievable conclusions, and endorse invalid arguments with believable conclusions. It seems that instead of following directions and assessing logical validity, the subjects based their assessments on personal beliefs. The respondents exhibited a belief bias.

Emotions have a big influence on decision making. Many people lose money in the stock market due to psychological reasons. People who suffer from more fear do more pessimistic risk estimates. Hirshleifer and Shumway (2003) find that positive mood could possibly lead to higher stock returns.

Fox and Clemen (2005) found that people tend to bias their beliefs towards an equal chance on every possible partition.

Sonnemann, Camerer, Langer and Fox (2008) suggested that outcome expectations depend on the partition of the outcome space. These biased expectations are also observed in the derivatives markets.

There was indeed a great urge to undertake a research work on Indian investors following the footsteps of previous researchers. This paper reflects the findings of that research work which

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was focused to observe the influence of individual's beliefs in investment decision making process.

Objectives

1) To observe the influence of individual's beliefs in investment decision making process.
2) To analyse such influences based on multiple demographic parameters.

Research Methodology

The entire research study is exclusively based on primary data. The primary data is collected through structured questionnaire. There are two distinctly segmented sections in the questionnaire:

    A.   Personal & Demographic information
    B.   Questions for Hypotheses testing

    Personal & Demographic information

    Question numbers 1-5 are for personal information and answers are open-ended.

  Q-1.   Name
  Q-2.   Address
  Q-3.   City
  Q-4.   Contact No.
  Q-5.   Email id

    Question numbers 6-10 are specifically for five demographic variables. Responses have been collected through a closed options mode.

  Q-6.   Gender
    Q-6 is to collect the information of gender which has two options, viz, Male and Female.

  Q-7.   Age
    Q-7 is to collect the information of age group of the individual which has two options: 26-35 Years, 36-45 Years, 46-55 Years and 56-65 Years. Age group upto 25 has not been considered as they are not too much exposed towards investment decision making as well as age group over 65 has also not been considered because of limited requirements of investment decisions.

  Q-8.   Occupation
    Q-8 is to collect the information of occupation which has three options: Salaried, Self-Employed and Professional.

  Q-9.   Annual Income
    Q-9 is to collect the information of income where four different income groups are kept which are: INR 3,00,000 to INR 6,00,000, INR 6,00,001 to INR 9,00,000, INR 9,00,001 to INR 12,00,000 and INR 12,00,001 to INR 15,00,000. The annual income group below INR 3,00,000 has been excluded for limited exposure towards investment and the annual income group above INR 15,00,000 has also been excluded due to their higher income status.

Q-10.   I invest in stock market (Investment frequency)
    Q-10 is to collect the information of investment frequency where four options are kept: (I invest in stock market) Regularly, Very often, Sometimes and Never. All the responses with "Never" option have been excluded as the responses of an individual having no exposure to the stock market do not reflect the proper views.

Questions for Hypotheses testing

Question numbers 11-15 are related to Hypothesis-1 "***Investment decision making is influenced by individual's beliefs.***"

To test this hypothesis, respondents are asked five individual questions which are as under:

Q-11.I follow the 'hot' tips from different sources to buy/sell stocks.
Q-12.When I hear the good announcements from a particular company, I buy the stock. Meanwhile, when I hear the bad news, I quickly sell the stock.
Q-13.I follow the mass sentiment to buy/sell the 'popular' stocks.
Q-14.I trust the research analysis and performance reports of a company to buy/sell a stock.
Q-15.I trust the buy/sell recommendations by print & electronic media relating to stocks.

In all the questions, the focus of research is to study how investors are dependent on their beliefs. It is said the investors generally stick to their beliefs which may create a stumbling block in the reasoning process. This results in a big failure in decision making in most of the cases. It is to be verified that investors' belief has influence on investment decision making.

Before we observe and analyse the responses, reliability analysis of the data is performed. Reliability analysis is applied to identify how well the questions grouped are positively correlated to one another. Cronbach's alpha value of 0.60 and above is considered to be reliable (Nunnally and Bernstein, 1994) as it indicates the items are homogenous and measuring the same construct. To establish the reliability, Cronbach's alpha for the grouped questions Q-11-15 is calculated.

For Q-11 to Q-15, respondents are advised to answer their opinion against each statement in terms of Likert scale. A five point Likert scale has been used with forced choice method. The responses are to measure the degree of agreements and disagreements. Statements are prepared carefully to indicate the existence of the biases. H-1 is tested vide Q-11 to Q-15 where all the statements are in support of the influence of belief. The five points of measurements are "Strongly Disagree", "Disagree", "Neither Agree nor Disagree", "Agree" and "Strongly Agree". The assigned values are -2, -1, 0, +1, +2 respectively. As the target is to know the degree of agreement or disagreement, forced choice method has been used. Applying this method, the respondents are not given the option of "Neither Agree nor Disagree". It forces the respondents either to give opinion for agreement or disagreement. For a particular statement, if the value of the answer is greater than zero, the statement is agreed and, if the value of the answer is less than zero, the statement is disagreed. Now, if the mean score of all responses for a particular question is greater than 0 and upto +1, it can be stated that the statement is agreed. Similarly, if the mean score of all responses for a particular question is greater than +1, it can be stated that the statement is strongly agreed. Reversely, if the mean score of all responses for a particular question is less than 0 and upto -1, it can be stated that the statement is disagreed and, if the mean score of all responses for a particular question is less than -1, it can be stated that the statement is strongly disagreed. Cumulating the values of all five questions grouped for the Hypothesis, the final opinion relating to acceptance or rejection of the Hypothesis is made. The mean score with a positive numeric value makes the hypothesis accepted and if the score crosses 1, it makes the hypothesis strongly accepted. On the other hand, the mean score with a negative numeric value makes the hypothesis rejected and if that is below -1, it makes the hypothesis strongly rejected.
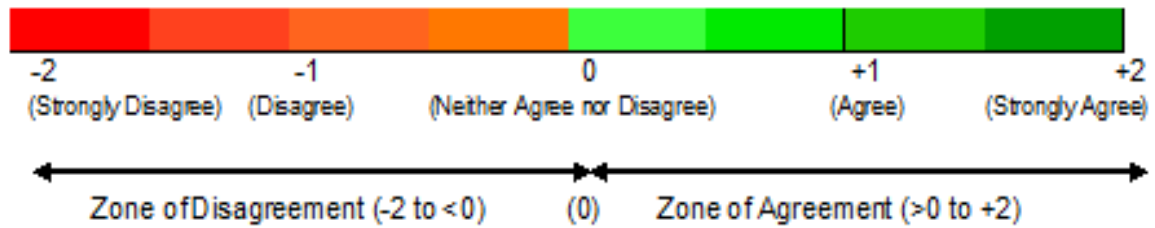
As respondents are not provided with the middle option, for all purposes, the scale appears as a four point scale. As a consequence, the data collection, analysis and testing of hypothesis are also performed with the options "Strongly Disagree (-2)", "Disagree (-1)", "Agree (+1)" and "Strongly Agree (+2)". The middle point signifying neither agreement nor disagreement is thus, non-existing in the entire data analysis and test of Hypothesis.

Data Analysis – Descriptive Statistics

Responses have been collected in the form of primary data through two different modes.

1. Online questionnaire (Through Surveymonkey.com)
2. Physical collection through hard copy of the questionnaire

A total number of 360 responses have been collected through online mode and 140 responses have been collected through physical collection mode. The data collection has taken place during the period 05.01.2015 to 02.01.2016.

The total numbers of 500 responses have been received from 97 different places of 20 states of India. Responses have been received from the following states:

1.	Andhra Pradesh	8.	Jharkhand	15.	Rajasthan
2.	Assam	9.	Karnataka	16.	Tamil Nadu
3.	Bihar	10.	Kerala	17.	Telangana
4.	Chhattisgarh	11.	Madhya Pradesh	18.	Uttar Pradesh
5.	Delhi	12.	Maharashtra	19.	Uttarakhand
6.	Gujarat	13.	Odisha	20.	West Bengal
7.	Haryana	14.	Punjab		

A question wise analysis is made. The responses received are presented in structured tabular format along with graphical representations. This is the descriptive statistics pertaining to the responses received against each question.

The gender wise distribution of the respondents is as follows:

Table – 1

Gender wise distribution of the respondents (Q-6)

Gender		
Answer Options	**Response Percent**	**Response Count**
Female	20.20%	101
Male	79.80%	399

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It is clear that male respondents (79.80%) are clearly outnumbering the female respondents (20.20%). It signifies that male respondents are more into investments.

The age wise distribution of the respondents is as follows:

Table – 2

Age wise distribution of the respondents (Q-7)

Answer Options	Response Percent	Response Count
26-35	72.60%	363
36-45	15.20%	76
46-55	8.80%	44
56-65	3.40%	17

The largest respondent age group is 26-35 (72.60%) followed by 36-45 (15.20%), 46-55 (8.80%) and 56-65 (3.40%). It signifies that annual income below INR 15,00,000 is mostly earned by the age group 26-35. As the maximum income limit is INR 15,00,000 the number of responses become less as we move to higher age groups.

The occupation wise distribution of the respondents is as follows:

Table – 3

Occupation wise distribution of the respondents (Q-8)

Answer Options	Response Percent	Response Count
Salaried	77.80%	389
Self-Employed	12.40%	62
Professional	9.80%	49

The largest respondent occupational group is Salaried (77.80%) which is significantly higher than the other two groups, Self-Employed (12.40%) and Professional (9.80%). It is in the line with the largest participation by the 26-35 age group and the income below INR 15,00,000.

The income wise distribution of the respondents is as follows:

Table – 4

Income wise distribution of the respondents (Q-9)

Answer Options	Response Percent	Response Count
INR 3,00,000 - 6,00,000	68.60%	343
INR 6,00,001 - 9,00,000	17.80%	89
INR 9,00,001 - 12,00,000	6.00%	30
INR 12,00,001 - 15,00,000	7.60%	38

The largest respondent income group is INR 3,00,000 - 6,00,000 (68.80%) which is followed by INR 6,00,001 – 9,00,000 (17.80%), INR 9,00,001 – 12,00,000 (6.00%) and INR 12,00,001 – 15,00,000 (7.60%). From a counter view, it is in the line with largest participation by the lowest age group and salaried class.

The investment frequency wise distribution of the respondents is as follows:

Table – 5

Investment frequency wise distribution of the respondents (Q-10)

Answer Options	Response Percent	Response Count
Regularly	10.40%	52
Very often	17.80%	89
Sometimes	71.80%	359
Never	0.00%	0

All such responses are not considered in this study where, respondents are found to be a non-investor. The majority of the respondents are investing "Sometimes" (71.80%) which is followed by "Very often" (17.80%) and "Regularly" (10.40%).

Q-11 to Q-15 is related to Hypothesis 1 where the Hypothesis is tested by these 5 questions. Responses are taken through a Likert scale with a forced choice method.

Table – 6

Strength of Agreement by respondents for Q-11 (H-1)

I follow the 'hot' tips from different sources to buy/sell stocks.		
Answer Options	Response Percent	Response Count
Strongly disagree (-2)	2.40%	12
Disagree (-1)	5.00%	25
Agree (+1)	68.80%	344
Strongly agree (+2)	23.80%	119

Table – 7

Strength of Agreement by respondents for Q-12 (H-1)

When I hear the good announcements from a particular company, I buy the stock. Meanwhile, when I hear the bad news, I quickly sell the stock.		
Answer Options	**Response Percent**	**Response Count**
Strongly disagree (-2)	2.00%	10
Disagree (-1)	6.80%	34
Agree (+1)	66.60%	333
Strongly agree (+2)	24.60%	123

Table – 8

Strength of Agreement by respondents for Q-13 (H-1)

I follow the mass sentiment to buy/sell the 'popular' stocks.		
Answer Options	**Response Percent**	**Response Count**
Strongly disagree (-2)	1.40%	7
Disagree (-1)	6.60%	33
Agree (+1)	70.40%	352
Strongly agree (+2)	21.60%	108

Table – 9

Strength of Agreement by respondents for Q-14 (H-1)

I trust the research analysis and performance reports of a company to buy/sell a stock.		
Answer Options	**Response Percent**	**Response Count**
Strongly disagree (-2)	2.20%	11
Disagree (-1)	10.00%	50
Agree (+1)	56.20%	281
Strongly agree (+2)	31.60%	158

Table – 10

Strength of Agreement by respondents for Q-15 (H-1)

I trust the buy/sell recommendations by print & electronic media relating to stocks.		
Answer Options	**Response Percent**	**Response Count**
Strongly disagree (-2)	2.00%	10
Disagree (-1)	6.20%	31
Agree (+1)	66.40%	332
Strongly agree (+2)	25.40%	127

Data Analysis – Test of Hypothesis

Questions are framed to test the Hypothesis keeping in view that individual's beliefs are actively participating in investment decision making process. If the questions are answered with an agreement, influence of beliefs is proved and vice versa. The hypothesis framed in this regard is as follows:

H-1: Investment decision making is influenced by individual's beliefs.

As already stated, before analysing the data, the reliability test has been performed for the grouped questions Q-11 to Q-15 in connection with the test of Hypthesis-1. The grouped questions of Q-11 to Q-15 have the Cronbach's alpha value of 0.721. It proves the positive correlation among the questions constructed in a fair manner and the reliability is established.

The answers given by the respondents for Q-11 to Q-15 reveal the followings:

Table – 11

Strength of Agreement by respondents for Q-11

I follow the 'hot' tips from different sources to buy/sell stocks.			
Answer Options	**Response Percent**	**Response Count**	**Score**
Strongly disagree (-2)	2.40%	12	-24
Disagree (-1)	5.00%	25	-25
Agree (+1)	68.80%	344	344
Strongly agree (+2)	23.80%	119	238
Total Score			533
Mean Score			1.07
Standard Deviation			0.806

Demographic analysis of the responses

Demographic Parameters		No	Strongly Disagree (-2)	Disagree (-1)	Agree (+1)	Strongly Agree (+2)	Total Respondents	Mean Score
Gender	Female	101	3	5	73	20	101	1.01
	Male	399	9	20	271	99	399	1.08
	Total	**500**	**12**	**25**	**344**	**119**	**500**	**1.07**
Age Group	26-35	363	6	15	247	95	363	1.13
	36-45	76	3	7	54	12	76	0.86
	46-55	44	3	0	31	10	44	1.02
	56-65	17	0	3	12	2	17	0.76
	Total	**500**	**12**	**25**	**344**	**119**	**500**	**1.07**
Occupation	Salaried	389	9	18	270	92	389	1.07
	Self-Employed	62	2	3	41	16	62	1.06
	Professional	49	1	4	33	11	49	1.00
	Total	**500**	**12**	**25**	**344**	**119**	**500**	**1.07**
Income Range	INR 3,00,000 - 6,00,000	343	7	15	230	91	343	1.12
	INR 6,00,001 - 9,00,000	89	2	5	66	16	89	1.00
	INR 9,00,001 - 12,00,000	30	0	4	25	1	30	0.77
	INR 12,00,001 - 15,00,000	38	3	1	23	11	38	1.00
	Total	**500**	**12**	**25**	**344**	**119**	**500**	**1.07**
Investment Frequency	Regularly	52	4	2	36	10	52	0.88
	Very often	89	4	5	61	19	89	0.97
	Sometimes	359	4	18	247	90	359	1.12
	Total	**500**	**12**	**25**	**344**	**119**	**500**	**1.07**

Male respondents have higher level of agreement. Age group 26-35, Salaried group, Income group INR 3,00,000-6,00,000 and Sometimes group have the highest level of agreements in four other parameters.

Table – 12

Strength of Agreement by respondents for Q-12

When I hear the good announcements from a particular company, I buy the stock. Meanwhile, when I hear the bad news, I quickly sell the stock.				
Answer Options	**Response Percent**	**Response Count**		**Score**
Strongly disagree (-2)	2.00%	10		-20
Disagree (-1)	6.80%	34		-34
Agree (+1)	66.60%	333		333
Strongly agree (+2)	24.60%	123		246
Total Score				525
Mean Score				1.05
Standard Deviation				0.834

Demographic analysis of the responses

	Demographic Parameters	No	**Strongly Disagree (-2)**	**Disagree (-1)**	**Agree (+1)**	**Strongly Agree (+2)**	**Total Respondents**	**Mean Score**
Gender	Female	101	2	6	73	20	101	1.02
	Male	399	8	28	260	103	399	1.06
	Total	**500**	**10**	**34**	**333**	**123**	**500**	**1.05**
Age Group	26-35	363	4	22	241	96	363	1.11
	36-45	76	3	10	49	14	76	0.80
	46-55	44	3	0	31	10	44	1.02
	56-65	17	0	2	12	3	17	0.94
	Total	**500**	**10**	**34**	**333**	**123**	**500**	**1.05**
Occupation	Salaried	389	8	27	257	97	389	1.05
	Self-Employed	62	1	3	46	12	62	1.05
	Professional	49	1	4	30	14	49	1.06
	Total	**500**	**10**	**34**	**333**	**123**	**500**	**1.05**
Income Range	INR 3,00,000 - 6,00,000	343	5	20	227	91	343	1.10
	INR 6,00,001 - 9,00,000	89	2	9	61	17	89	0.92
	INR 9,00,001 - 12,00,000	30	0	2	25	3	30	0.97
	INR 12,00,001 - 15,00,000	38	3	3	20	12	38	0.92
	Total	**500**	**10**	**34**	**333**	**123**	**500**	**1.05**
Investment Frequency	Regularly	52	3	6	28	15	52	0.88
	Very often	89	4	6	64	15	89	0.90
	Sometimes	359	3	22	241	93	359	1.11
	Total	**500**	**10**	**34**	**333**	**123**	**500**	**1.05**

Male respondents have higher level of agreement. Age group 26-35, Professional group, Income group INR 3,00,000-6,00,000 and Sometimes group have the highest level of agreements in four other parameters.

Table – 13

Strength of Agreement by respondents for Q-13

I follow the mass sentiment to buy/sell the 'popular' stocks.			
Answer Options	**Response Percent**	**Response Count**	**Score**
Strongly disagree (-2)	1.40%	7	-14
Disagree (-1)	6.60%	33	-33
Agree (+1)	70.40%	352	352
Strongly agree (+2)	21.60%	108	216
Total Score			521
Mean Score			1.04
Standard Deviation			0.777

Demographic analysis of the responses							
Demographic Parameters		No	**Strongly Disagree (-2)**	**Disagree (-1)**	**Agree (+1)**	**Strongly Agree (+2)**	**Total Respondents**	**Mean Score**
Gender	Female	101	2	6	73	20	101	1.02
	Male	399	5	27	279	88	399	1.05
	Total	**500**	**7**	**33**	**352**	**108**	**500**	**1.04**
Age Group	26-35	363	3	22	248	90	363	1.10
	36-45	76	2	5	59	10	76	0.92
	46-55	44	2	3	33	6	44	0.86
	56-65	17	0	3	12	2	17	0.76
	Total	**500**	**7**	**33**	**352**	**108**	**500**	**1.04**
Occupation	Salaried	389	5	26	271	87	389	1.05
	Self-Employed	62	1	5	46	10	62	0.95
	Professional	49	1	2	35	11	49	1.08
	Total	**500**	**7**	**33**	**352**	**108**	**500**	**1.04**
Income Range	INR 3,00,000 - 6,00,000	343	4	19	237	83	343	1.10
	INR 6,00,001 - 9,00,000	89	1	8	66	14	89	0.94
	INR 9,00,001 - 12,00,000	30	0	3	23	4	30	0.93
	INR 12,00,001 - 15,00,000	38	2	3	26	7	38	0.87
	Total	**500**	**7**	**33**	**352**	**108**	**500**	**1.04**
Investment Frequency	Regularly	52	3	2	39	8	52	0.90
	Very often	89	2	4	72	11	89	0.97
	Sometimes	359	2	27	241	89	359	1.08
	Total	**500**	**7**	**33**	**352**	**108**	**500**	**1.04**

Male respondents have higher level of agreement. Age group 26-35, Professional group, Income group INR 3,00,000-6,00,000 and Sometimes group have the highest level of agreements in four other parameters.

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Table –14

Strength of Agreement by respondents for Q-14

I trust the research analysis and performance reports of a company to buy/sell a stock.			
Answer Options	**Response Percent**	**Response Count**	**Score**
Strongly disagree (-2)	2.20%	11	-22
Disagree (-1)	10.00%	50	-50
Agree (+1)	56.20%	281	281
Strongly agree (+2)	31.60%	158	316
Total Score			525
Mean Score			1.05
Standard Deviation			0.955

Demographic analysis of the responses							
Demographic Parameters		No	**Strongly Disagree (-2)**	**Disagree (-1)**	**Agree (+1)**	**Strongly Agree (+2)**	**Total Respondents**	**Mean Score**
Gender	Female	101	2	11	54	34	101	1.06
	Male	399	9	39	227	124	399	1.05
	Total	**500**	**11**	**50**	**281**	**158**	**500**	**1.05**
Age Group	26-35	363	6	39	196	122	363	1.07
	36-45	76	2	4	49	21	76	1.09
	46-55	44	3	6	27	8	44	0.70
	56-65	17	0	1	9	7	17	1.29
	Total	**500**	**11**	**50**	**281**	**158**	**500**	**1.05**
Occupation	Salaried	389	8	36	225	120	389	1.06
	Self-Employed	62	2	6	33	21	62	1.05
	Professional	49	1	8	23	17	49	0.96
	Total	**500**	**11**	**50**	**281**	**158**	**500**	**1.05**
Income Range	INR 3,00,000 - 6,00,000	343	7	38	189	109	343	1.03
	INR 6,00,001 - 9,00,000	89	2	7	54	26	89	1.07
	INR 9,00,001 - 12,00,000	30	0	1	17	12	30	1.33
	INR 12,00,001 - 15,00,000	38	2	4	21	11	38	0.92
	Total	**500**	**11**	**50**	**281**	**158**	**500**	**1.05**
Investment Frequency	Regularly	52	3	5	31	13	52	0.88
	Very often	89	2	6	51	30	89	1.13
	Sometimes	359	6	39	199	115	359	1.05
	Total	**500**	**11**	**50**	**281**	**158**	**500**	**1.05**

Female respondents have higher level of agreement. Age group 56-65, Salaried group, Income group INR 9,00,001-12,00,000 and Very often group have the highest level of agreements in four other parameters.

Table – 15

Strength of Agreement by respondents for Q-15

I trust the buy/sell recommendations by print & electronic media relating to stocks.			
Answer Options	**Response Percent**	**Response Count**	**Score**
Strongly disagree (-2)	2.00%	10	-20
Disagree (-1)	6.20%	31	-31
Agree (+1)	66.40%	332	332
Strongly agree (+2)	25.40%	127	254
Total Score			535
Mean Score			1.07
Standard Deviation			0.823

Demographic analysis of the responses							
Demographic Parameters		No	**Strongly Disagree (-2)**	**Disagree (-1)**	**Agree (+1)**	**Strongly Agree (+2)**	**Total Respondents**	**Mean Score**
Gender	Female	101	2	6	68	25	101	1.07
	Male	399	8	25	264	102	399	1.07
	Total	**500**	**10**	**31**	**332**	**127**	**500**	**1.07**
Age Group	26-35	363	4	24	234	101	363	1.11
	36-45	76	3	3	57	13	76	0.97
	46-55	44	3	3	26	12	44	0.93
	56-65	17	0	1	15	1	17	0.94
	Total	**500**	**10**	**31**	**332**	**127**	**500**	**1.07**
Occupation	Salaried	389	8	21	259	101	389	1.09
	Self-Employed	62	1	6	40	15	62	1.00
	Professional	49	1	4	33	11	49	1.00
	Total	**500**	**10**	**31**	**332**	**127**	**500**	**1.07**
Income Range	INR 3,00,000 - 6,00,000	343	5	23	221	94	343	1.10
	INR 6,00,001 - 9,00,000	89	1	8	62	18	89	0.99
	INR 9,00,001 - 12,00,000	30	2	0	24	4	30	0.93
	INR 12,00,001 - 15,00,000	38	2	0	25	11	38	1.13
	Total	**500**	**10**	**31**	**332**	**127**	**500**	**1.07**
Investment Frequency	Regularly	52	4	2	37	9	52	0.87
	Very often	89	3	4	61	21	89	1.04
	Sometimes	359	3	25	234	97	359	1.11
	Total	**500**	**10**	**31**	**332**	**127**	**500**	**1.07**

Both Male and Female respondents have same level of agreement. Age group 26-35, Salaried group, Income group INR 12,00,001-15,00,000 and Sometimes group have the highest level of agreements in four other parameters.

The overall scenario for Q-11 to Q-15 is as under:

- Male respondents have higher level of agreement.
- Age group 26-35 has highest level of agreement.
- Salaried group has highest level of agreement.
- Income group INR 3,00,000-6,00,000 has highest level of agreement.
- Sometimes group have the highest level of agreement.

All the answers individually signify strong agreement with respective mean scores of 1.07, 1.05, 1.04, 1.05 and 1.07 while, if we consider the agreement scenario for the grouped questions Q-11 to Q-15, we have the mean score as 1.06.

It shows that the all the individual questions are answered with strong agreement by the respondents as all the mean scores are greater than 1. The mean score of the group is also greater than 1 which signifies strong agreement for the group as a whole.

Demographic analysis

Table – 16

Demographic analysis of respondents' choices on Grouped Questions for H-1

Gender	Female	Male			H-1
Mean score	1.04	1.06			1.06
Age Group	**26-35**	**36-45**	**46-55**	**56-65**	**H-1**
Mean score	1.11	0.93	0.91	0.94	1.06
Occupation	**Salaried**	**Self-Employed**	**Professional**		**H-1**
Mean score	1.07	1.02	1.02		1.06
Income Range	**3,00,000-6,00,000**	**6,00,001-9,00,000**	**9,00,001-12,00,000**	**12,00,001-15,00,000**	**H-1**
Mean score	1.09	0.98	0.99	0.97	1.06
Investment Frequency	**Regularly**	**Very often**	**Sometimes**		**H-1**
Mean score	0.88	1.00	1.09		1.06

There is no major difference in opinion among Female and Male in the context of grouped questions for Hypothesis-1. While the mean score is 1.06 for the entire respondents, mean score for Female is marginally lower at 1.04 but for Male respondents, it is 1.06. There is a strong agreement for both the genders.

Age group 26-35 shows the strong agreement for Hypothesis-1 with a mean score of 1.11. The other three age groups are marginally lower than strong agreement zone with respective mean scores of 0.93, 0.91 and 0.94. However, comfortable agreement is there in terms of mean score across the all age groups.

All the occupational groups are showing strong agreement in favour of Hypothesis-1. Self-Employed and Professional groups are having the same mean score of 1.02 while salaried group shows a higher mean score of 1.07. The analysis reveals that agreement in favour of Hypothesis-1 stands firm irrespective of occupational variability.

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The group having income range of INR 3,00,000-6,00,000 shows the strong agreement for Hypothesis-1 with a mean score of 1.09. The other three income groups are just lower than strong agreement zone with mean scores of 0.98, 0.99 and 0.97 respectively for the income groups 6,00,001-9,00,000, 9,00,001-12,00,000 and 12,00,001-15,00,000. However, all the income groups show clear agreement in favour of Hypothesis-1.

Mean score is the lowest at 0.88 for the investors belonging to the Regular group. The score improves for the investors of Very often group with a mean score of 1.00. The investors of the Sometimes group show the highest level of agreement with a much higher mean score of 1.09. The agreement in favour of Hypothesis-1 is still very clearly seen irrespective of the frequency of investing.

Table – 17

Response Analysis for Hypothesis-1

Particulars	Q-11	Q-12	Q-13	Q-14	Q-15	H-1 (Total Score)	
Strongly Disagree (-2)	12	10	7	11	10	50	8 (<-5)
Disagree (-1)	25	34	33	50	31	173	9 (<0, >=-5)
Neither Agree nor Disagree (0)	NA	NA	NA	NA	NA	NA	NIL (=0)
Agree (+1)	344	333	352	281	332	1642	213 (<=5, >0)
Strongly Agree (+2)	119	123	108	158	127	635	270 (>5)
Total Respondents	500	500	500	500	500	500 (x 5)	500
Total Score	533	525	521	525	535	2639	---
Mean Score	1.07	1.05	1.04	1.05	1.07	1.06	---
Disagreement Zone (%)	7.40%	8.80%	8.00%	12.20%	8.20%	8.92%	3.40%
Indifferent Zone (%)	NA	NA	NA	NA	NA	NA	0.00%
Agreement Zone (%)	92.60%	91.20%	92.00%	87.80%	91.80%	91.08%	96.60%

Mean scores have been calculated based on the assigned values of -2, -1, 1 and 2 for strong disagreement, disagreement, agreement and strong agreement. It means, the strong disagreement zone lies between -2 to <-1, disagreement zone is -1 to <0, agreement zone is >0 to 1 and strong agreement zone is >1. The total score for Q-11 is thus (12 x -2) + (25 x -1) + (344 x 1) + (119 x 2) = 533. The mean score is thus, 533 ÷ 500 = 1.07. We see the mean scores for Q-12 to Q-15 as 1.05, 1.04, 1.05 and 1.07 respectively. Hence, strong agreement is exhibited in case of all five questions.

A respondent has the option to chose any one out of four options where two belong to wider agreement zone (strong agreement zone + agreement zone, assigned vale range >0) and other two belong to wider disagreement zone (strong disagreement zone + disagreement zone, assigned vale range <0). In case of Q-11, 12 respondents have strong disagreement and 25 are having disagreement. Taking both into consideration, the disagreement zone is (12+25) ÷ 500 x 100% = 7.40%. Similarly, respondents in the agreement zone amounting to (344+119) ÷ 500 x 100% = 92.60%. The disagreement-agreement combinations for Q-12 to Q-15 are (8.80%, 91.20%), (8.00%, 92.00%), (12.20%, 87.80%) and (8.20%, 91.20%) respectively. It is evident that huge majority of the respondents are in the agreement zone for all five questions.

The Hypothesis-1 is tested in the light of mean score. The total score of the grouped questions (Q-11 to Q-15) = 533 + 525 + 521 + 525 + 535 = 2639. The mean score is then 2639 ÷ (500 x 5) = 1.06. The total no of respondents in the disagreement zone has been calculated by adding total no of respondents with "Strongly Disagree" options and "Disagree" options. The total no of respondents in the agreement zone has been calculated by adding total no of respondents with "Strongly Agree" options and "Agree" options. The count happens to be 223 and 2277 which signifies a disagreement zone of 8.92% and an agreement zone of 91.08%. It proves the Hypothisis-1 to be true.

Another analysis has been performed to prove the Hypothesis. The assigned values aggregating all five questions for a respondent ranges between -10 to +10. This range may be classified in five zones, viz, strong disagreement zone (-10 to -6), disagreement zone (-5 to -1), indifferent zone (0), agreement zone (1 to 5) and strong agreement zone (5 to 10). Based on the total score, 8 respondents have the total score between -10 to -6, 9 respondents have the total score between -5 to -1, no respondent has the score of 0, 213 respondents have the total score between 1 to 5 and 270 respondents have the total score between 6 to 10. In the broader dimension, (8+9) = 17 (3.40%) respondents belong to disagreement zone and (213+270) = 483 (96.60%) respondents belong to agreement zone. It re-affirms that Hypothesis-1 to be true.

Hence, it is proved that "***Investment decision making is influenced by individual's beliefs.***"

Hypothesis-1 (H-1) is accepted.

Conclusion

In this research study, it is strongly evidenced that individuals are influenced by their beliefs while executing investment decision making. Every individual carries her/his own beliefs which may be pertinent to the investment decision making. There is a relationship between beliefs and investor's decision making. This suggests that individuals rely on beliefs in making decisions. Some of them rely on 'hot' tips. Some investors buy shares on a whim or believe in the recommendations given by even an unknown person. They follow the popular opinion in buying or selling shares. Their beliefs may create reasoning error and generate an adverse influence on the investment decision making process which may cause a serious failure in judgement in so many cases.

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