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Impact of Behavioural Biases on Investment Objective and Expected Rate of Return- A Study of Female Investors

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ABSTRACT

It is generally assumed that financial decisions are exclusively based on the rationality of objective calculations. This traditional view of finance is challenged by the theories and studies of behavioural finance. The perspective on behavioural finance strongly believes that human decisions are not truly rational and several psychological factors like heuristic and cognitive biases influence the investment decisions. In the present day time as the role of the women in the family has transformed drastically. Women are becoming financially independent and hence are also making investment decisions. The present study aims to examine the impact of behavioural biases on the investment decisions of the female investors. The data has been collected from 345 working women. The study examines the impact of mental accounting, loss aversion, herd mentality and over confidence biases on female investors expected rate of return and duration of investment. The results have been analysed using multiple regression. The study concludes that some of the selected behavioural biases have a strong impact investment decision.

Introduction

The rules of logic and rationality are simply considered to be dominating when talking about the investment decisions made by any firm or an individual. This is solely because the motive behind these decisions is maximization of profit with minimized risk. Not only for large business investment decisions but also decisions related to individual household small investment, everything is simply made on rationality. Although, consciously and subconsciously all these decisions are affected by psychological and cognitive factors. Studies suggest that heuristic driven factors are effectively active when time is a constraint or during information overload or when optimum solution may not be possible.

Rationality is strongly suggested to be a process of decision making which helps to achieve personal objectives. This does not form a standard norm as a rule of logic and probability. (Elqayam and Evans, 2011). The argumentative skills are strong in a person the confirmation bias may also be stronger as the

person may have stronger arguments and evidences to prove opinion and to persuade.(Mercier and Sperber, 2011). This view supports the "soft normativtism" (Stupple and Ball, 2014) implying that the rationality and rule of thumb following the decision making only improves the decision. According to Lieder et al. (2017) quotes that the interrelatedness of congnitive biases and the human rationality opens a new paradigm of research in the field of economics and Social sciences. Hence, it is assumed that decision based on standard norms are logical and rational. Nevertheless, the decisions which are not completely optimal are those resulting out of heuristic decision making process " cognitive biases" (Tversky and Kahneman, 1974). The cognitive biases often add to our confidence during making decisions even when we are conscious of our cognitive bend and are also clear about the risk in the decision making. (Risen, 2015). (Simon, 1955; Gigerenzer and Gaissmaier, 2010). Barno, L. J., & Tuwei, J. K. (2020) studies the role of prospect bias on small and medium scale enterprises in Nairoba City. The study concludes that all the prospect factors have significant influence on financial decisions.

The present study examines the impact of a few heuristic and prospect theory biases which include

a) Overconfidence

Overconfidence is considered one of the major factors of behavioural finance. It is when people generally over rate their own judgement and skills in decision making. Thus the person does not give importance to the series of events during financial decisions and draw conclusions out of their limited knowledge and judgement ignoring the current flow of dynamic financial and investment environment. (Prosad, Kapoor, Sen Gupta, & Roy Choudhary, 2018); (Kamoto, 2014) (Huang, Tan, & Zhong, 2014).

b) Mental Accounting

People tend to segregate the financial decisions and budgets into different categories and create a mental account as per our mental intent. All the financial activities are evaluated on the cognitive front to keep the operations of the financial decisions in alignment.

c) Herd Mentality

Following the actions of others and the community without involving the information available is a herd behaviour. When the financial decisions are made out of the pressure of community ignoring the rationality of the information available in hand, it is herd mentality dominating. This behaviour is often reflected during investment in share markets.

d) Loss Aversion

When people tend to make financial decisions to avoid losses rather than focusing on the expected gains, this is loss aversion bias. This is often seen in stock market where people tend to buy or sell the shares due to fear of loss rather than for long term gains.

Problem Statement

In the modern times as women have become financially independent, they are also getting chance to plan and take investment decisions. However, the cognitive and psychological biases strongly affect the rationality of decisions. These biases consciously and unconsciously are present during the decisions making and cannot be avoided. Specific study on the working women and their investment behaviour surely is imperative to draw conclusion so as to taken measures to over them.

Objectives

1. To find out the preference of investment avenues by female investors
2. To study the preference of investment objective by female investors.
3. To examine the preference of obtaining investment information by female investors
4. To analyse the impact of mental accounting, herd mentality, over confidence and loss aversion biases on the duration of investment
5. To access the impact of mental accounting, herd mentality, over confidence and loss aversion biases on the expected rate of return

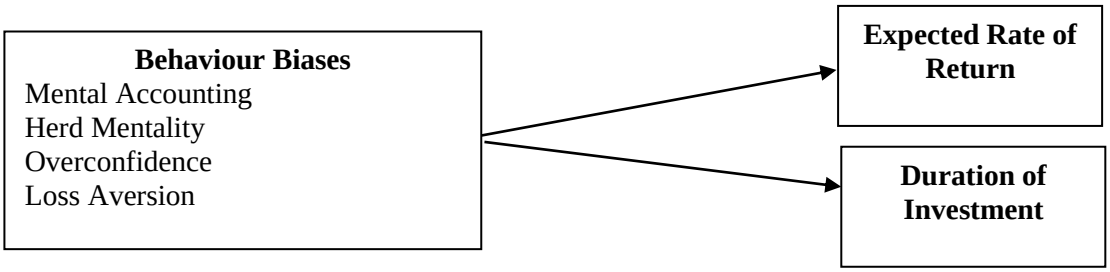
Hypothesis

$H0_1$: Behavioural biases have no significant impact on the expected rate of return from investment by female investors

$H0_2$: Behavioural biases have no significant impact on the duration of investment

Research Design

It is a micro investigation nature which will give the impact of behavioural biases on the investment decisions of the working women of Jaipur. The study is descriptive and exploratory in nature. The universe for the study comprises of all the working women of Jaipur involved in investment activities, investing in various avenues such as shares, debentures, real estate, Gold, Silver etc. The study undertakes four behaviour biases including heuristic based and prospect theory based biases.



Sampling Technique: The sample has been collected using random sampling. Sample size has been determined using Krejcie and Morgan formula with Margin of Error- 5%, Confidence level- 95 Percent, Response Distribution- 50 %, Size of the Sample – 385. Out of the proposed sample size due 345 valid responses were obtained.

Nature of Data: The primary data is collected with the help of a questionnaire from the female investors who are involved in investing activities. Secondary data has been collected from various published sources such as books, journals, magazines, newspapers and selected case studies.

Tools of Data Collection: In order to study the female investor's behaviour, the researcher has used various behavioural finance variables. The questionnaire consisted of three sections. The first section consists of demographic information about the investors under study. The second section deals with the avenues of investment decisions, expected rate of return, duration of investment, awareness and preference for investment objectives of the female investors. The third section of the questionnaire consisted of statements related to behavioural finance variables measured using Likert scale.

Data Analysis: Descriptive statistics involves use of percentage, mean and standard deviation respectively. To measure the impact of behaviour dispositions multiple regression has been used.

Test of Reliability

As a general rule, a coefficient greater than or equal to 0.5 is considered acceptable and a good indication of construct reliability (Nunnally, 1978). The overall Cronbach's alpha for the five categories which is 0.734.

Data Analysis and Interpretation

The demographic profile of the respondents on marital status, education, working sector and annual income can be studied from the following tables-

Table 1
Descriptive Analysis of the Respondents

		Frequency	Percent
Qualification	**Undergraduate**	32	9
	Graduate	61	17.7
	Postgraduate	154	44.8
	Professional	98	28.4
Income	**4-6 lakh**	32	9
	7-9 lakh	128	37.1
	10-12 lakh	185	53.9
Working Status	**Public**	92	26.8
	Private	253	73.2
Marital Status	**Married**	270	78.1
	Unmarried	75	21.9
Duration of Investment	**Less Than One Year**	98	28.7
	1-5 year	154	44.5
	More Than 5 Year	93	26.8
Expected Rate of Return	**5-10%**	95	27.7
	11%-15%	128	37.1
	16%-20%	32	9
	More Than 20%	90	26.1
	Total	345	100

The table 1 describes the profile of the respondents on the basis of education. Most of the respondents are highly educated. 28.4 percent respondents are professionals and 44.8 percent respondents are post graduates. It can be observed that no respondent earns income more than 13 lakhs. 53 percent of the respondents fall in the income group of 10-12 lakhs per annum and 37.1 percent respondents earn income in between 7 to 9 lakh. The table also shows the respondents on the basis of their work status.26.8 percent of the respondents are working in the public sector and 73.2 percent females are working in the private sector. The marital status of the total 310 respondents includes 26.8 percent of the respondents as being married and 73.2 percent females are unmarried. The table also gives detail on the duration for which the respondents make their investment.44.5 percent of female investors invest for 1 to 5years, 28.7 percent invest for less than 1 year and 26.8 females invest for more than 5 years. The table also highlights the expectations of the respondents on the rate of return over their investment. 27.7 percent of female investors expect 5 to 10 percent of return, 37.1 percent expect 11-15 percent of return, 16-20 percent return is

expected by 9 percent of the respondents and 26.1 percent of the total respondents expect more than 20 percent of the return.

Table 2
Preference of Investment Avenues

	Lowest	Fourth Preference	Neutral	Second Preference	Highest
Bank Deposit	62	33	31	33	186
	18.10%	9.40%	9.00%	9.40%	**54.10%**
Real Estate	121	33	31	35	125
	35.80%	9.40%	9.00%	9.70%	**36.10%**
Post Office Deposit	33	65	63	59	125
	9.40%	19.00%	18.40%	17.10%	**36.10%**
Gold And Silver	60	3	115	65	102
	17.70%	0.60%	**33.60%**	19.00%	**29.10%**
Life Insurance Schemes	31	65	122	65	62
	9.00%	19.00%	**35.60%**	19.00%	17.40%
Pension Funds	113	15	79	63	75
	32.30%	4.50%	22.60%	18.40%	22.20%
Chit Funds	256	64	25	0	0
	74.20%	18.70%	7.10%	0.00%	0.00%
Corporate Bonds	217	0	64	0	64
	62.60%	0.00%	18.70%	0.00%	18.70%
Mutual Funds	150	64	34	64	33
	43.50%	18.70%	9.70%	18.70%	9.40%
Provident Funds	93	33	0	33	186
	26.50%	9.40%	0.00%	9.40%	**54.70%**
Shares	150	0	129	0	66
	43.50%	0.00%	37.30%	0.00%	19.00%

The analysis of the table 2 shows that the female investors preferable avenue for investment are provident fund and bank deposits with 54.7 and 54.1 percent respondents giving high preference to them respectively. Corporate bonds are least preferred as an investment avenue with 62.6 percent respondents. Second in line are shares and mutual funds with 43.5 percent of the least preference respond for them.

Table 3
Objective for Investment

	Lowest	Fourth Preference	Neutral	Second Preference	Highest
Safety Principal	0	0	31	33	281
	0.00%	0.00%	9.00%	9.40%	**81.60%**
Income Generation	31	0	61	126	127
	9.00%	0.00%	17.70%	**36.50%**	**36.80%**
Specific Investment Goal	0	0	64	0	281
	0.00%	0.00%	18.40%	0.00%	**81.60%**
Accumulate Assets	29	0	0	97	219
	8.70%	0.00%	0.00%	**27.70%**	**63.50%**
Tax Shelter	59	33	31	33	189
	17.10%	9.40%	9.00%	9.40%	**55.20%**

Capital Appreciation	0	59	35	63	188
	0.00%	17.10%	9.70%	18.40%	**54.80%**

The analysis of the table 3 describes the objectives of the female investors, i.e the reason for which they make investment. The precise investment goal and safety principle (81.6. %) are the prime concerns of during investment. The second in line is assets accumulation (63.5%). Whereas Capital appreciation (54.8%), tax shelter (55.2%) and income generation are not amongst the primary objectives for investment.

Table 4
Preferred Source of Investment Information

	Lowest	**Fourth Preference**	**Neutral**	**Second Preference**	**Highest**
Electronic Media	33	33	58	126	95
	9.40%	9.40%	16.82%	**36.51%**	**27.56%**
Prospectus	64	129	63	62	27
	18.80%	**36.80%**	18.40%	17.70%	8.40%
Broker Fund Manager	96	33	99	84	33
	27.80%	9.40%	**28.70%**	**24.40%**	9.40%
Newspaper	96	28	128	62	31
	27.80%	8.70%	**36.80%**	17.70%	9.00%
Family and Friends	0	65	0	34	246
	0.00%	19.00%	0.00%	9.70%	**71.30%**

The analysis of the table 4 describes which source of information is sort after for digging out information during investment decisions. The data shows that the principle source is family and friends (71.3 %). The second in line is electronic media (27.56%). Whereas brokers and information through newspapers and magazines are least preferred source of information related to investment decisions by the respondents.

$H0_1$: Behavioural biases have no significant impact on the expected rate of return from investment by female investors

Table 5
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.818[a]	.676	.660	.629

Table 5 indicating the model summary shows that the *R2=.676* adjusted to *.666.* This means that 67% of the variance in female investor decisions is expressed using regression model. The adjusted *R2=.818* means that 67% of the variance in individual female investor decisions is explained by the regression model derived from the sample population. Therefore, null hypothesis is rejected and it can be inferred that the behaviour bias impacts expected rate of return for female investors

Table 6
Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.937	.467		-4.256	.000
Loss Aversion	.179	.110	.087	1.705	.081
Mental Accounting	-.730	.064	-.443	-11.521	.000
Overconfidence	1.803	.106	.801	15.873	.001

Herd Mentality	.401	.163	.118	2.279	.021

The p-value for loss aversion is not significant hence it won't be included in the final model.

$H0_2$: Behavioural biases have no significant impact on the duration of investment

Table 7
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939[a]	.880	.879	.247

Table 7 indicating the model summary shows that the *R2=.880* adjusted to *.879.* This means that 88% of the variance in female investor decisions is expressed using regression model. The adjusted *R2=.879* means that 87% of the variance in individual female investor decisions is explained by the regression model derived from the sample population.

Table 8
Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	-.370	.187		-2.028	.033
Loss aversion	-.045	.044	-.032	-.970	.433
Mental accounting	-.647	.019	-.680	-28.973	.001
Over confidence	.764	.043	.523	17.811	.000
Herd mentality	.903	.069	.464	13.108	.001

The results of the coefficient table show that the loss aversion have p value greater than .05 hence it should not be included in the final model. The p- value for all the other variables shows significant results.

Conclusion

The present study was conducted to study the investment behaviour of the working women and the role of the behavioural biases. The results provide sufficient evidence that the role of biases cannot be ignored. However, the role of loss aversion bias on duration of investment and the expected rate of return is found to be insignificant. The impact of herd mentality, Overconfidence, Mental Accounting for duration of investment shows significant results. The analysis also shows that the level of confidence of females who are educated is high on their own investment decisions perhaps they understand their investment needs. Moreover, it can also be concluded that the risk taking ability of these females is not high as they do not expect high returns.

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