STUDY ON GENDER BASED DIFFERENCES IN DECISION MAKING PROCESS FOR INVESTMENTS

Prashika Patil and Kajol Shah

Abstract

The present study aims at evaluating the gender differences in investment decisions. The study is exploratory in nature. Stratified random sampling was employed to conduct the study where the respondents in the sample were divided into strata based on gender. The randomness was decided on the basis of every entrant to the bank with the motive of investment. The study was conducted using questionnaire prepared with the help of experts. Data was analyzed using bar-diagram and chi-square test was employed for hypotheses testing. Finding of the study reveals that there exists significant difference between male and female investors with regard to making financial decisions.

INTRODUCTION

Investment is an important factor with the ongoing increase in the expenses of the common men or women. It becomes equally important that a due consideration should be given to analyze what factors should be taken into consideration while making an investment decision. With the unpredictable environment it becomes very important that we study the environment and come up with the best alternative to investment in because investments are made taken into account the future aspects of the investment, the investments are made to generate profits.

Often in the mindset of people is a thought that men may have a higher sense of investing and they come up with the best plans. But taking into account what we are observing is that men and women have now become equally competent in making investment decision. In fact they have come up with the various ways through which they take their investment decision. Due to women empowerment, the working women prefer to invest some amount of their income in different investment option.

Most of the women are responsible for the task of daily money management. Most of the women do their investment in partnership with their spouse or partner while so do their investment by themselves. Men who are involved in taking care of their task do all the investment by themselves. Majority of the people do their investment regularly in six months. Equal proportion of men and women do their savings during six months.

Gender is considered as an important parameter will taking the investment decision. There are various environmental and personal factors that cause change in the investment behavior of the individual and also the various decision-making process of the investment, keeping into consideration the female investors as well. Whereas, most of the people have started investing large amount of their income in various investment options. Gender plays an important role while taking the investment decision as males are considered as risk-takers whereas females do not prefer taking risk in their investment.

Women prefer to receive the investment information from the various personal sources such as relatives, friends, colleagues. On the other hand men prefer to get the entire information for investment on their own. There are different investment tools that are available for investment. Men and women also differ in the way of using the computer based investment tools, most importantly the internet. Women are not mostly familiar with the use of the personal computer.
and the internet facilities provided. Evaluation of risk is done so that the investment scheme so that it does not lead to the loss of the customer. The various factors are taken into consideration before investing that includes the different market conditions, rate of return, rate of interest, etc. if the investment done does not show the expected return men mostly prefer to change their investment option that will produce more return. Whereas, women tend to continue with the same investment scheme.

Women also experience change in their investment due to the change in the marital status, birth of a child or even the death of a family member. If there is a sudden increase in the financial status of the family, men show higher involvement in the investment. Another important factor that causes increase in the investment for women whereas men are least likely to change their investment behavior.

The best instrument to gain information about the investments for women as well as men is to consult the financial advisor who pursue great knowledge about the investment schemes. But even in this situation the behavioral changes in the gender arises. Women describe the advisors as best way to gain investment information while the men feel that it is against their dignity to go to a financial advisor and consult for where to invest and how to invest.

Women tend to take decision on more emotional level whereas men believes on facts while taking the investment decision. Women are more general and considers both objective and subjective information while taking the investment decision whereas men considers only the objective information over the subjective information.

**RESEARCH OBJECTIVES**

The main goal of the research is to:

Evaluate whether gender differences show impact on the investment decisions. And then we Explain how the personal factors as well as the environmental factors affect the investment decisions then we research In order to evaluate the gender differences that show impact on the investment decisions we used different hypothesis test such as (P-test, Chi square test)

**LITERATURE REVIEW**

As Berggren and Gonzalez says the purpose behind this research study was to determine whether gender really affect the financial decisions. This particularly targeted a group of well-educated Swedish youth who have been raised on the concept of equality. They also tried to investigate whether there was any relationship between risk, gender and overconfidence. The population that they considered was the students of the Umea School of business. This implied that the generalizations are only applicable to this target group and similar groups in other business schools in Sweden. The main aim of the research was to gather knowledge about how gender affects financial decisions.

They concluded that gender has a great impact on decisions taken for financial investment. They found that women approach financial decisions in more conservative manner whereas women prefer to survey in their study. Males are risk takers therefore they invest more frequently in the financial market. Also men show the tendency to completely ignore the opportunity of risk free investment. Women are more inclined to being more risk averse as compared to men. This proves that men are more risk takers than women. Women are low in terms of confidence. Overconfidence is highly dependent on the situation.
As Charness, Gneezy Are men more willing to take financial risks than women? The solution for this question has an immediate relevance for many economic issues faced by the people. They focused on the analysis of the gender differences in Investments. The study of the experimental economics is growing rapidly. This involves experimenting in a very easy way. It happens that instead of working on the data that is already available people tend to find new evidences. The results that are reported in this research paper are obtained by using the data that is already available based on the previous study where the data of interest was recorded independently of the goal of the study.

The approach in this paper is more common and will help to provide the answers to the different economic questions faced by the people. They analyzed that women prefer to make smaller investments than men and hence they are found more risk adverse. Most of the experiments that are performed in this research were not designed to investigate about the gender differences but also the behavioral changes in the investment schemes. They also found a very consistent result that women invest makes less investment than men and prefer to take less risk, thus results ending up making investment in the investment options that are less risky.

As Bajtelsmit and Bernasek Says This paper surveys the existing literature regarding gender differences in investment and considers the policy implications of these differences. This research has serious implications for the benefit of the women during their retirement. The recent study implies that women prefer to Invest their pensions in the more conservative manner than men. This paper surveys the existing literature regarding gender differences in investment and considers the policy implications of these differences. In this paper, we have delineated the alternative explanations for gender differences in investment and risk-taking in an effort to help guide data collection and identification of relevant variables for empirical research.

This article surveys what is known and what is still unknown regarding gender differences in investing. It summarizes the existing empirical work on gender differences in risk-taking behavior which includes a comparison of datasets studied, methodologies employed, and conclusions made on the basis of the survey. The implications of these conclusions for individuals and society at large are explored in the third section. The main objective of the research paper is to evaluate the human behavior towards the different investment options.

**PROPOSED HYPOTHESIS**

1. 70% of the male population considers interest rate as extremely important in making the investment decision
2. 77% of the male population save their income in between 20-30%
3. The proportion of female who invest in gold at low interest rate environment is 32%
4. Less than 31% of the female population prefer investing in FDs in low interest rate environment
5. Equity Investment of female population is independent of annual income
6. High return on insurance investment is independent of gender
RESEARCH METHODOLOGY

- Type of Research:
The methods used in this study are primary and quantitative in nature

- Sources of data:
The data required for the study are primary in nature the primary data have been collected by making use of questionnaire

- Sampling size and techniques:
Total samples used for this study will be around 375. The method of sampling use for this study is random sampling. The sample test tells us about how the investment decision differ according to the gender

- Mode of data collection:
The data collected through questionnaire survey

- Analysis methodology:
The collected data have been analys is by making use of hypothesis testing.
**Occupation**
- Salaried: 70%
- Business: 15%
- Housewife: 4%
- Professionals: 7%
- Retired: 3%

**Qualification**
- Commerce: 32%
- Engineer: 14%
- Master: 20%
- Professional: 15%
- Undergraduate: 17%

**No. of children**
- None: 57%
- One: 35%
- Two: 19%
- Three: 3%

**No. of earning family members**
- One: 35%
- Three: 11%
- Two: 50%
- Five: 0%
- More than Five: 1%
### Hypothesis 1: Test of Proportion

<table>
<thead>
<tr>
<th>Ho:</th>
<th>70% of the male population does not consider interest rate as extremely important in making the investment decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha:</td>
<td>70% of the male population consider interest rate as extremely important in making the investment decision</td>
</tr>
</tbody>
</table>

\[ H_0: p = 0.70 \]
\[ H_a: p \neq 0.70 \]

Two tailed test
P-test
Confidence = 0.99
Alpha = 0.10
Probability = 0.05
Critical value = 1.64

Observation:
We observed that 70% of the male population does not consider interest rate as extremely important in making the investment decision

Insights:
As per the low interest rate market male population does not find valuable in investing their funds

\[ p = 0.70 \]
\[ q = 0.30 \]
\[ p' - p = 0.00 \]
\[ p.q = 0.21 \]
\[ (\sqrt{p.q}/n) = 0.01 \]

Observed value = 0.01
Probability = 1.01
Alpha = 0.10
p value > alpha
We failed to reject the null
Hypothesis 2: Test of Proportion

<table>
<thead>
<tr>
<th>Ho</th>
<th>77% of the male population does not save their income in between 20-30%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha</td>
<td>77% of the male population save their income in between 20-30%</td>
</tr>
</tbody>
</table>

$H_o : p = 77\%$

$H_a : p \neq 77\%$

two tailed test

$p$-test

Confidence = 90%

$\alpha = 0.1$

Probability = 5% 95%

Critical value = 1.64

Calculating the observed value

$X = 62$

$N = 81$

$p' = 0.77$

$P = 0.77$

$Q = 0.23$

$p' - p = 0.0046$

$p.q = 0.18$

$p' - p = 0.098$

$(\sqrt{p.q}/n) = 0.098$

Observed value = 0.098

$p$-value = 0.92

$\alpha = 0.1$

$p$ value > $\alpha$

We failed to reject the null

**Observation:**
We observed that 77% of the male population does not save their income in between 20-30%

**Insights:**
Due to the more advanced standard of living of male population, the saving is not possible.

Inflation has caused more expense for the middle class group whose main objective is to save so they save less.
Hypothesis 3: Test of Proportion

**Ho:** The proportion of female who does not invest in gold at low interest rate environment is 32%
**Ha:** The proportion of female who invest in gold at low interest rate environment is 32%

\[ H_0 : p = 32\% \]
\[ H_a : p \neq 32\% \]

two tailed test
p-test
Confidence=99%
Alpha=0.1
Probability=5% 95%

Critical value=1.64

Calculating the observed
\[ X=62 \]
\[ N=191 \]
\[ p'=0.32 \]
\[ P=0.32 \]
\[ Q=0.68 \]
\[ p'-p=0.00 \]
\[ p.q=0.22 \]
\[ p'-p \]
\[ (\sqrt{p.q}/n)=0.137 \]

**Observations:**

We observed that the proportion of female who does not invest in gold at low interest rate environment is 32%

**Insights**

Gold has low liquidity rate than others investments. Therefore women do not prefer investing in gold.

**p value > alpha**
We failed to reject the null
Hypothesis 4: Test of Proportion

<table>
<thead>
<tr>
<th>Ho:</th>
<th>Less than 31% of the female population does not prefer investing in FDs in low interest rate environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha:</td>
<td>Less than 31% of the female population prefer investing in FDs in low interest rate environment</td>
</tr>
</tbody>
</table>

H₀ : p > 0.5
H₁ : p < 0.5

Left tailed test
p-test
Confidence = 0.99
α = 0.1
Probability = 0.1
Critical value = -1.2816

Calculating observed-value
X = 61
N = 126
p' = 0.48413
P = 0.5
Q = 0.5
p' - p = -0.0159
p.q = 0.25
p' - p = -0.3563
(sqrt(p.q)/n)
Observed value = -0.3563

p-value = 0.36079
Alpha = 0.1
p value > alpha
We failed to reject the null

Observations:
We observed that less than 31% of the female population does not prefer investing in FDs in low interest rate environment

Insights:
Fixed deposits are prone to uncertainty because interest rates tend to move in multi-year cycles.
To avoid this, they invest in mutual funds as the rate of return is greater than 4-10%
Hypothesis 5: Test of independence

**Ho:** Equity Investment of female population is independent of annual income  
**Ha:** Equity Investment of female population is not independent of annual income

Chi square test  
Right tail test  
Alpha=0.1  
Probability=0.1  
Critical-value=28.41  
Observed-value=27.80  
P-value=0.77  
Alpha=0.1
p value > alpha  
We failed to reject the null

<table>
<thead>
<tr>
<th></th>
<th>1,00,000 to 2,50,000</th>
<th>2,50,000 to 5,00,000</th>
<th>50,000 to 1,00,000</th>
<th>Less than 50,000</th>
<th>Nil</th>
<th>Grand Total</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 Lacs</td>
<td>3</td>
<td>8</td>
<td>27</td>
<td>38</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-8 Lacs</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>17</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-10 Lacs</td>
<td></td>
<td>6</td>
<td>6</td>
<td>12.68</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 3 lacs</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>56</td>
<td>44%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than 10 Lacs</td>
<td>1</td>
<td></td>
<td>3</td>
<td>17</td>
<td>13%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(blank)</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
<td>4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>19</td>
<td>94</td>
<td>126</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1,00,000 to 2,50,000</th>
<th>2,50,000 to 5,00,000</th>
<th>50,000 to 1,00,000</th>
<th>Less than 50,000</th>
<th>Nil</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5 Lacs</td>
<td>0.60</td>
<td>0.30</td>
<td>3.02</td>
<td>5.73</td>
<td>28.35</td>
</tr>
<tr>
<td>5-8 Lacs</td>
<td>0.27</td>
<td>0.13</td>
<td>1.35</td>
<td>2.56</td>
<td>12.68</td>
</tr>
<tr>
<td>8-10 Lacs</td>
<td>0.10</td>
<td>0.05</td>
<td>0.48</td>
<td>0.90</td>
<td>4.48</td>
</tr>
<tr>
<td>Less than 3 lacs</td>
<td>0.89</td>
<td>0.44</td>
<td>4.44</td>
<td>8.44</td>
<td>41.78</td>
</tr>
<tr>
<td>More than 10 Lacs</td>
<td>0.06</td>
<td>0.03</td>
<td>0.32</td>
<td>0.60</td>
<td>2.98</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2.00</td>
<td>1.00</td>
<td>10.00</td>
<td>19.00</td>
<td>94.00</td>
</tr>
<tr>
<td>(Fo-Fe)^2/Fe</td>
<td>1,00,000 to 2,50,000</td>
<td>2,50,000 to 5,00,000</td>
<td>50,000 to 1,00,000</td>
<td>Less than 50,000</td>
<td>Nil</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------</td>
<td>----------------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>-----</td>
</tr>
<tr>
<td>3-5 Lacs</td>
<td>0.60</td>
<td>0.30</td>
<td>0.00</td>
<td>0.90</td>
<td>0.06</td>
</tr>
<tr>
<td>5-8 Lacs</td>
<td>0.27</td>
<td>5.55</td>
<td>2.02</td>
<td>0.07</td>
<td>0.57</td>
</tr>
<tr>
<td>8-10 Lacs</td>
<td>0.10</td>
<td>0.05</td>
<td>0.48</td>
<td>0.90</td>
<td>0.52</td>
</tr>
<tr>
<td>Less than 3 lacs</td>
<td>0.01</td>
<td>0.44</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>More than 10 Lacs</td>
<td>13.81</td>
<td>0.03</td>
<td>0.32</td>
<td>0.60</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Observed value**

**Observation:**
Equity Investment of female population is not independent of annual income

**Insights:**
The equity which a shareholder receives is neither fixed nor controllable by her. The management of the company decides how much dividend should be given.
**Hypothesis 6: Test of independence**

<table>
<thead>
<tr>
<th>Ho: High return on insurance investment is independent of gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ha: High return on insurance investment is not independent of gender</td>
</tr>
</tbody>
</table>

**Chi square test**

Right tail test  
Alpha=0.1  
Probability=0.1  
Critical-value=14.6837  
Observed-value=21.38  
P-value=0.38  
Alpha=0.1  

p value > alpha  
We failed to reject the null

**Observation:**  
High return on insurance investment is not independent of gender

**Insights:**  
Insurance is claimed to be the best option for investment. It is a form of investment that is stable as long as the premiums are paid. In case of life insurance, for example, your beneficiary will obtain a death benefit upon an event of your untimely demise.
### Observed Investments

<table>
<thead>
<tr>
<th>Gender</th>
<th>Bonds</th>
<th>Equity</th>
<th>Fds</th>
<th>Gold</th>
<th>Govt Security</th>
<th>Insurance</th>
<th>Mutual Fund</th>
<th>Property</th>
<th>PPF</th>
<th>SIP</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>30</td>
<td>2</td>
<td>2</td>
<td>38</td>
<td>18</td>
<td>1</td>
<td>21</td>
<td>126</td>
<td>29%</td>
</tr>
<tr>
<td>Male</td>
<td>3</td>
<td>46</td>
<td>9</td>
<td>45</td>
<td>3</td>
<td>13</td>
<td>94</td>
<td>36</td>
<td>12</td>
<td>55</td>
<td>316</td>
<td>71%</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>51</td>
<td>15</td>
<td>75</td>
<td>5</td>
<td>15</td>
<td>132</td>
<td>54</td>
<td>13</td>
<td>76</td>
<td>442</td>
<td></td>
</tr>
</tbody>
</table>

### Expected Investments

<table>
<thead>
<tr>
<th>Gender</th>
<th>Bonds</th>
<th>Equity</th>
<th>Fds</th>
<th>Gold</th>
<th>Govt Security</th>
<th>Insurance</th>
<th>Mutual Fund</th>
<th>Property</th>
<th>PPF</th>
<th>SIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>1.71</td>
<td>14.54</td>
<td>4.28</td>
<td>21.38</td>
<td>1.43</td>
<td>4.28</td>
<td>37.63</td>
<td>15.39</td>
<td>3.71</td>
<td>21.67</td>
</tr>
<tr>
<td>Male</td>
<td>4.29</td>
<td>36.46</td>
<td>10.72</td>
<td>53.62</td>
<td>3.57</td>
<td>10.72</td>
<td>94.37</td>
<td>38.61</td>
<td>9.29</td>
<td>54.33</td>
</tr>
</tbody>
</table>

### (Fo-Fe)^2/Fe

<table>
<thead>
<tr>
<th>Gender</th>
<th>Bonds</th>
<th>Equity</th>
<th>Fds</th>
<th>Gold</th>
<th>Govt Security</th>
<th>Insurance</th>
<th>Mutual Fund</th>
<th>Property</th>
<th>PPF</th>
<th>SIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>0.97</td>
<td>6.26</td>
<td>0.70</td>
<td>3.48</td>
<td>0.23</td>
<td>1.21</td>
<td>0.00</td>
<td>0.44</td>
<td>1.98</td>
<td>0.02</td>
</tr>
<tr>
<td>Male</td>
<td>0.39</td>
<td>2.50</td>
<td>0.28</td>
<td>1.39</td>
<td>0.09</td>
<td>0.48</td>
<td>0.00</td>
<td>0.18</td>
<td>0.79</td>
<td>0.01</td>
</tr>
</tbody>
</table>
CONCLUSION

The study on gender based differences in decision making process for investment concludes that from the findings that men prefer to take higher risk in comparison to women. Men tend to show high trend for being overconfident. The results reported in this paper are obtained by using data from previous studies based on one similar design in which the data of interest was recorded independently of the goal of the study. People tend to make new researches and find new evidence without taking into account the available data. The methodology used for the survey is easy to implement and the approach taken in this research is more common and also helps to provide solutions to the different hypothesis taken into consideration. Women make small investments and they are risk averse, they prefer to invest in the investment options that are less risky. Women’s portfolios are less risky than men’s. However, studying investments in field data has certain limitations.

Investors experience in investment has a great impact on the overconfidence. The level of overconfidence increases as the experience of investment increases. While both women and men were involved in money management tasks, women more frequently reported being responsible for these tasks than men. While more women held responsibility for the daily money management tasks, men were more likely to be in charge of investment-related activities.

Although the vast majority of participants reported reviewing their investments at least once during the twelve months prior to the interview, men and women varied in how they responded. Men were more likely to make adjustments to their investments, either by increasing their amount or by altering their investment mix. Women, however, were more likely to seek the advice of a financial professional.

LIMITATIONS OF RESEARCH

The research activity is based on complete assumptions because we tend to assume certain important factors which are involved in research and then come up with the conclusion. If we take a look at what we have performed here we will come to know that research is borne to have certain limitations with it. Broadly classifying it as it may be possible that the respondent may lack time and perform wrong response may give vague reasons. Possibilities prevail that the respondent may not get the question right and he may give wrong answer. There is a possibility that due to technical issues he may not only get the questionnaire and then the response may not be received only. There is a possibility that people in spite of getting the questionnaire may not answer it.

Therefore we have to keep in considerations all this factors while working on our questionnaire and then work on our responses because we have to keep the aspect of assumption to a big extent.
REFERENCES

Charness, Gary and Gneezy, Uri, Strong Evidence for Gender Differences in Investment (September 18, 2007).

Available at SRN: https://ssrn.com/abstract=648735 or http://dx.doi.org/10.2139/ssrn.648735


Available at SSRN: https://ssrn.com/abstract=2238 or http://dx.doi.org/10.2139/ssrn.2238

Jonas Berggren Romualdo Gonzalez-, Gender difference in financial decision making - A quantitative study of risk aversion and overconfidence between the genders