

A study on the impact of Anchoring and Cognitive Dissonance on investment behavior with special reference to Income level, occupation and economic & political events

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Abstract : This paper is an attempt to study on the impact of anchoring and cognitive dissonance on investment behavior with special reference to income level, occupation and economic & political events. This paper is an sincere attempt to identify the significant impact of behavioral finance on investment behavior of investors. The inferences has been derived from 468 sample from Udaipur and studies investment behavior with special reference to anchoring and cognitive dissonance.

Introduction

Stock market is an important part of the economy of a country. The stock market plays a pivotal role in the growth of the industry and commerce of the country that eventually affects the economy of the country to a great extent. That is reason that the government, industry and even the central banks of the country keep a close watch on the happenings of the stock market. The stock market is important from both the industry's point of view as well as the investor's point of view. Most people, if they have anything left at all after paying their bills will think first of putting that extra money into a saving bank or into life insurance. Nobody could possibly quarrel with such a prudent course, because those forms of investment are essential if a man is going to protect himself properly against the always unpredictable emergencies of life. But today millions of people have come to regard securities-stocks and bonds in all their varied forms-as another equally good form of investment. Of course, there's a risk in buying stocks and bonds- and for most people it's a far bigger risk than it needs to be, because they have taken never taken the time to study securities or find out how to invest in them wisely. As stock market is the barometer of economic growth it is very significant to have a study on it. There are many factors which affect the stock market viz. economic issues, political events, socio-cultural factors etc.

Stock market is very volatile. Though it is said that market depends upon the sentiments of the investors but behind these sentiments many more factors are governing the investment behavior of the investors. These factors are political issues, economic issues, international affairs, war, natural calamity, socio-cultural factors etc. Some factors have their impact on stock market before the occurrence of that particular event and others are having post occurrence impact. Whatever may be the timing of occurrence but it is for sure that these events and issues do affect investment behavior. For example Greece crisis, Change in rules of FIIs, P- Notes issues, Modi Government in power, state elections these are few events which made stock

indices very volatile. So this study is a sincere attempt to study the impact of Anchoring and Cognitive Dissonance on investment behavior with special reference to Income level, occupation and economic & political events.

According to the primary conventions of financial theory every participants of economy are assumed “wealth maximizers”. It means their decisions are based on the information available to them. However, in practically there are numerous examples in which emotion and psychology have undue influence upon our decisions, and the result is that “rational” actors can display unpredictable or irrational behaviors. The branch of economics which studies this paradox is called behavioral finance. This relatively new field seeks to combine behavioral and cognitive psychological theory with conventional economic theory in order to propose explanations as to why people might make irrational financial decisions.

Anchoring

Anchoring is a phenomenon that occurs in the financial world, too. Investors sometimes base their decisions on irrelevant figures and statistics. As an example, some investors invest in the stocks of companies that have dropped considerably over a short span of time. These investors are likely anchoring on a recent high point for the stock’s value, likely believing in some way that the drop in price suggests that there is an opportunity to buy the stock at a discounted rate. The best way to avoid anchoring in investment practices is to engage in rigorous critical thinking. It’s best to be careful about the figures you utilize to evaluate a stock’s potential. The most successful investors don’t base their decision on just one or two benchmarks. Rather, they evaluate each company from a variety of perspectives in order to derive the truest picture of the investment landscape at hand.

Cognitive Dissonance

In cognitive dissonance it is very hard to make investor feel that they made poor decision in the first place. Many a times feeling of self esteem restrict from learning from mistakes. They used to attribute their failure to chance rather than to poor decision. It is for sure those who don’t accept their mistakes then in future also there are the possibilities of committing mistakes too. So to that extent investment behavior is very much affected with cognitive dissonance.

Review of literature

Alquraan, T., Alqisie, A., & Shorafa, A. A. (2016) studies the effect of behavioral finance factor on Saudi stock market’s investment decision of individual investors. Cronbach’s Alpha and ANOVA have been used to explore the various factors of behavioral finance which influence stock markets investment decisions. The study explains how herd behavior is insignificant in such decisions. In the same way demographic decisions are also not significant but education level has no effect on investment decisions.

Haritha, P. and Uchil, R. (2016) did a conceptual review of literature on factors affecting investors' investment decisions and sentiments at the time it also studied the impact of behavioral pitfalls on investment decisions. Investment behavior is the function of herd behavior, macro economic factors according to this study.

Tuyon, J., & Ahmad, Z. (2016) studies the various perspective of behavioral finance efficiency of stock market of Malaysia. This study uses ANOVA F test for calculating mean, Chi- square for calculating median and Bartlett for calculating variances. This study proves to mitigate excessive behavioral risk.

Farooq, A., & Sajid, M. (2015) studies the various factors affecting investment decisions. The study was conducting in Pakistan and sample was collected from equity fund managers and individual investors. Cronbach's alpha and ANOVA have been used to derive results. The results can be concluded that there are few factors which have positive and significant effect on investment decisions such as heuristics, financial tools uses and firm level corporate governance. At the same time risk aversion is negatively correlated to investment decisions.

Gupta, S. and Sharma, M. (2015) studies how investors' sentiments are inter related with stock market behavior. This study was conducted on Malaysian investors and tries to develop few theories of specific behavior of Malaysian investors. This study proves irrational behavior of investors. This study suggests most of the Malaysian investors follow other investor opinion and blame others for failure also.

Humra, Y. A. S. H. B. A (2014) try to discuss various general principles of behavioral finance which includes various theories like heuristic, herding behavior and prospect theory. This study tries to correlate how investors behave irrationally and what are the emotional factors and physiological process are very much significant in behavioral finance while taking investment decisions.

Kengatharan, L., & Kengatharan, N. (2014) explores the various factors of behavior which influence individual investors of Sri Lanka. This study uses descriptive statistics, multiple regression analysis and factor analysis in order to derive results of Colombo stock exchange's investors. These study emphases on four behavioral factors which affects investments decisions which are identified as herding, prospect, market and heuristics.

Ngoc, L. T. B. (2014) tries to study behavioral pattern of individual investors at Vietnam stock market. With the help factor analysis and Cronbach's alpha test the results are derived. This study derives five significant behavioral factors which affect investors' behavior, such as herding, prospect, gamble's fallacy, market, overconfidence and anchoring.

Qadri, S. U., & Shabbir, M. (2014) aim to study various behavior factor of investment i.e. overconfidence and illusion of control biases at Islamabad stock exchange. With the help of ANOVA this study identifies

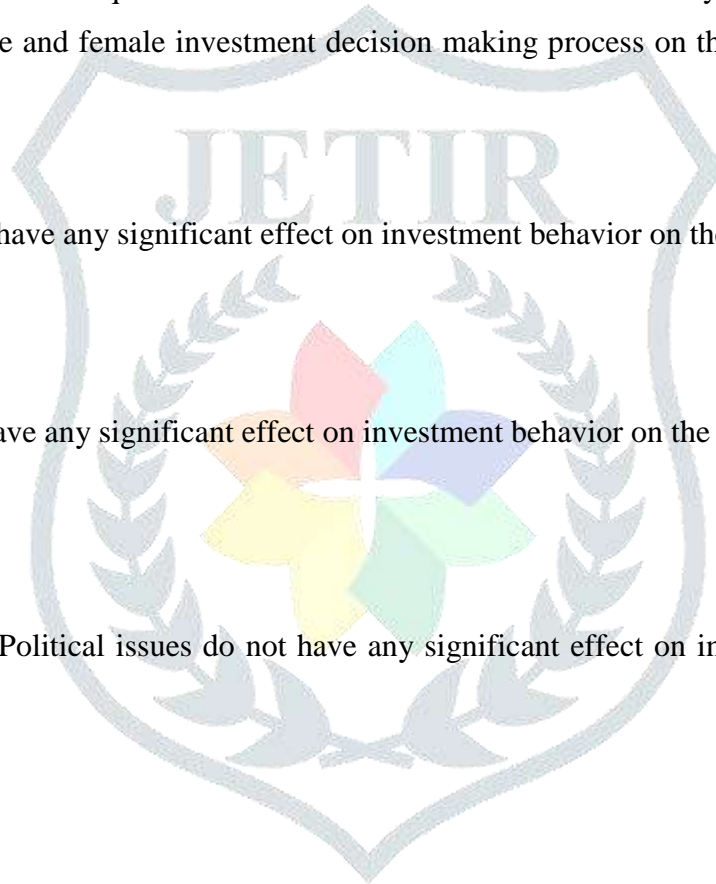
that overconfidence and illusion of control biases is having more vital impact on Pakistani investors' decision making process at Islamabad stock exchange.

Ranjbar, M. H., Abedini, B., & Jamali, M. (2014) aim to examine correlation between investors' performance in Tehran stock exchange and behavioral factors. This study uses structural equation modeling to derive results. This study identifies availability bias, anchoring and herding behavior as most effective dimensions of investment behavior at Tehran.

Bashir, T., Rasheed, S., Raftar, S., Fatima, S., & Maqsood, S. (2013) take behavioral biases as main factor of investor decision making at Pakistan. This study also segregates its sample in male and female and applies correlation and chi square test in order to derive results. The study fails to prove significant relationship between male and female investment decision making process on the basis of overconfidence bias.

Hypothesis

1. Income level does not have any significant effect on investment behavior on the following dimensions
 - i. Anchoring
 - ii. Cognitive Dissonance
2. Occupation does not have any significant effect on investment behavior on the following dimensions
 - i. Anchoring
 - ii. Cognitive Dissonance
3. Economic events and Political issues do not have any significant effect on investment behavior on the following dimensions
 - i. Anchoring
 - ii. Cognitive Dissonance



2x2x2 factorial design

Occupation(B)	Events (A)			
	Economical(A₁)		Political (A₂)	
	Moderate Income(C₁)	High Income(C₂)	Moderate Income (C₁)	High Income (C₂)
Business (B₁)	Ex.Gr.I (A ₁ B ₁ C ₁) N=52	Ex.Gr.II (A ₁ B ₁ C ₂) N=68	Ex.Gr.III (A ₂ B ₁ C ₁) N=62	Ex.Gr.IV (A ₂ B ₁ C ₂) N=58
Service(B₂)	Ex.Gr.V (A ₁ B ₂ C ₁) N=54	Ex.Gr.VI (A ₁ B ₂ C ₂) N=63	Ex.Gr.VII (A ₂ B ₂ C ₁) N=59	Ex.Gr.VIII (A ₂ B ₂ C ₂) N=52

A= Event**B= Occupation****C= Income**

According to research design sample size is used 468. The data is divided into eight groups having different characteristics. 52 are moderate income and business class investors whose response is taken on the effect of economical issues on their investment behavior. It is denoted as Ex.Gr.I. Next 68 is high income and business class investors whose response is taken on the effect of economical issues on their investment behavior. It is denoted as Ex.Gr.II. Next 62 is moderate income and business class investors whose response is taken on the effect of political issues on their investment behavior. It is denoted as Ex.Gr.III. Next 58 is high income and business class investors whose response is taken on the effect of political issues on their investment behavior. It is denoted as Ex.Gr.IV. Next 54 is moderate income and service class investors whose response is taken on the effect of economical issues on their investment behavior. It is denoted as Ex.Gr.V. Next 63 is high income and service class investors whose response is taken on the effect of economical issues on their investment behavior. It is denoted as Ex.Gr.VI. Next 59 is moderate income and service class investors whose response is taken on the effect of political issues on their investment behavior. It is denoted as Ex.Gr.VII. Next 52 is high income and service class investors whose response is taken on the effect of political issues on their investment behavior. It is denoted as Ex.Gr.VIII.

Research design= 2x2x2 Factorial design

Number of respondents = 468

Exp. g. 1 (A₁B₁C₁) = Moderate income Business man/woman in context to Economic event respondentsExp. g. 2 (A₁B₁C₂) = High income business man/woman in context to Economic event respondents

Exp. g. 3 (A2B1C1) = Moderate income Business man/woman in context to Political event respondents

Exp. g. 4 (A2B1C2) = High income Business man/woman in context to Political event respondents

Exp. g. 5 (A1B2C1) = Moderate income Service man/woman in context to Economic event respondents

Exp. g. 6 (A121C2) = High income Service man/woman in context to Economic event respondents

Exp. g. 7 (A2B2C1) = Moderate income Service man/woman in context to Political event respondents

Exp. g. 8 (A2B2C2) = High income Service man/woman in context to Political event respondents

Variable:

- Independent Variable

1. Events

- i. Economical Events

- ii. Political Events

2. Occupation

- i. Service

- ii. Business

3. Income level of investor

- i. Moderate income (Less than 5,00,000 PA)

- ii. High income (More than 5,00,000 PA)

- Dependent Variable

Investment Behavior

Statistical Analysis- Statistical will be done by using the following test where necessary

- Mean

- S.D

- F Test

3.7 Sampling Design

The sample will be primary and secondary. The sample will comprise of 468 investors of BSE and NSE, Moderate income and high income belongs to different occupation as business and service from Udaipur district. Random Sampling will be used. The population of this research is comprised of all the branches of

stock broking companies in Udaipur. There are such 14 stock broking companies have been identified which are as follows

1. Sharekhan
2. HDFC Securities
3. Kotak securities
4. Emkay share and brokers limited
5. Anand Rathi Stock Broker
6. Nakshatra securities
7. Nine Star Broking Pvt. Ltd
8. IIFL Securities Ltd
9. Swastika investmart
10. Arihant Investment
11. ICICI Direct
12. Nirmal Bang
13. Edelweiss Broking ltd
14. Geojit BNP Paribas

4.2.2 Dimension 3- Anchoring

4.2.3.1 Anchoring in context to economic events

Table 4.20 Anchoring in context to economic events

Income Level (B)	Occupation(A)	
	Business(A1)	Service(A2)
Moderate Level (B1)	Mean=6.73 S.D.=2.12 N=52	Mean=5.46 S.D.=2.07 N=54
High Level (B2)	Mean=7.07 S.D.=2.14 N=68	Mean=6.51 S.D.=2.03 N=63

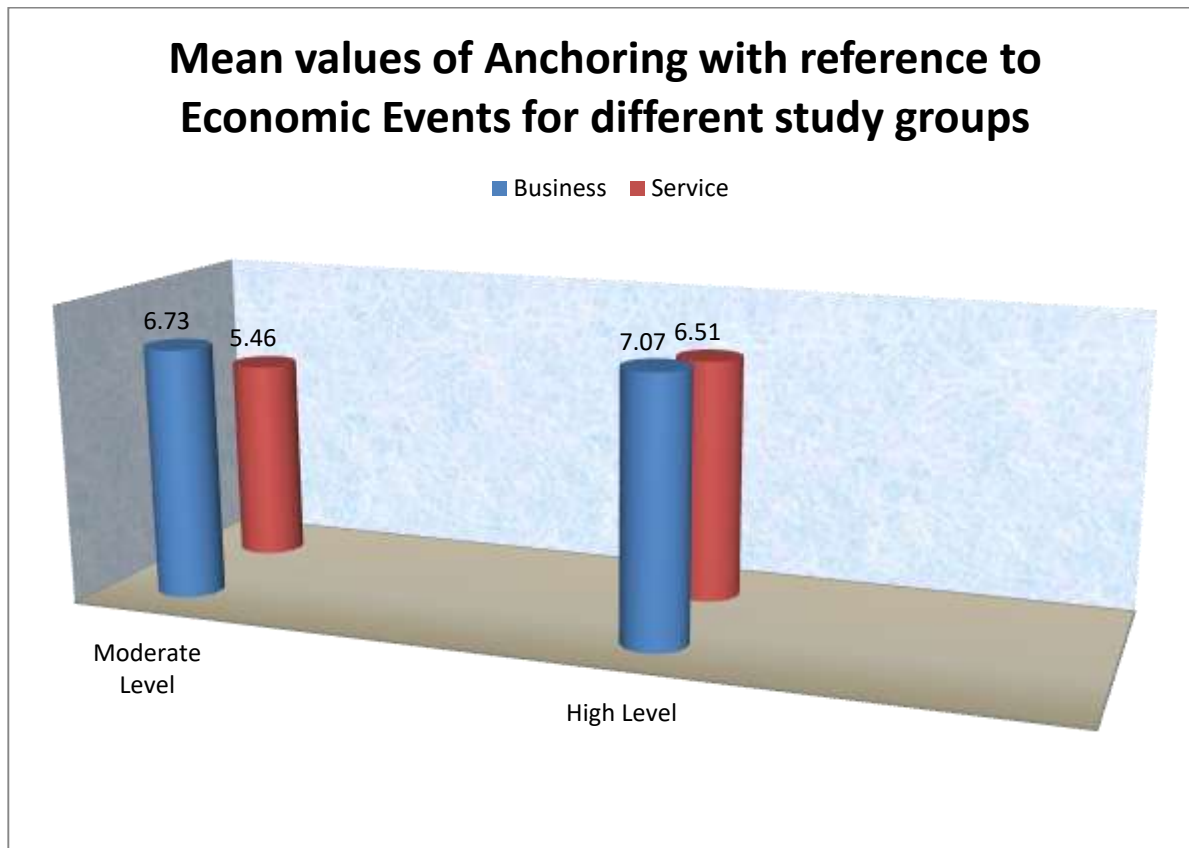
Graph 4.14 Anchoring in context to economic events

Table 4.20 reveals comparative analysis of third dimension i.e. anchoring on the basis of mean and standard deviation. Table 4.20 shows the mean values of various experimental groups in economic perspective. These groups represent occupation as A and A1 as business and A2 as service. On the other hand income level is represented as B and B1 as moderate income level and B2 as high income level. Mean of experimental group A1B1 i.e. business class of moderate income level is 6.73, mean of experimental group A2B1 i.e. service class of moderate level is 5.46, mean of experimental group A1B2 i.e. business class of high income level is 7.07 and mean of experimental group A2B2 i.e. service class of high income level is 6.51. According to above results given in table 4.20 and graphical presentation of data in graph 4.14, it can be clearly observed that highest mean is in A1B2 group which represents business class of high income group. It can be clearly noticed that this group is having highest anchoring effect regarding their investment decision. Lowest anchoring effect level is in A2B1 group which represents service class of moderate group. At moderate income level business class is having high anchoring effect on investment behavior than service class investors. At high income level service class is having low anchoring effect on investment behavior than business class.

4.2.2.2 Anchoring in context to political issues

Table 4.21 Anchoring in context to political issues

Income Level (B)	Occupation(A)	
	Business(A1)	Service(A2)
Moderate Level (B1)	Mean=6.37 S.D.=2.03 N=62	Mean=5.85 S.D.=1.67 N=59
High Level (B2)	Mean=6.53 S.D.=2.11 N=58	Mean=7.17 S.D.=1.82 N=52

Graph 4.15 Anchoring in context to political issues

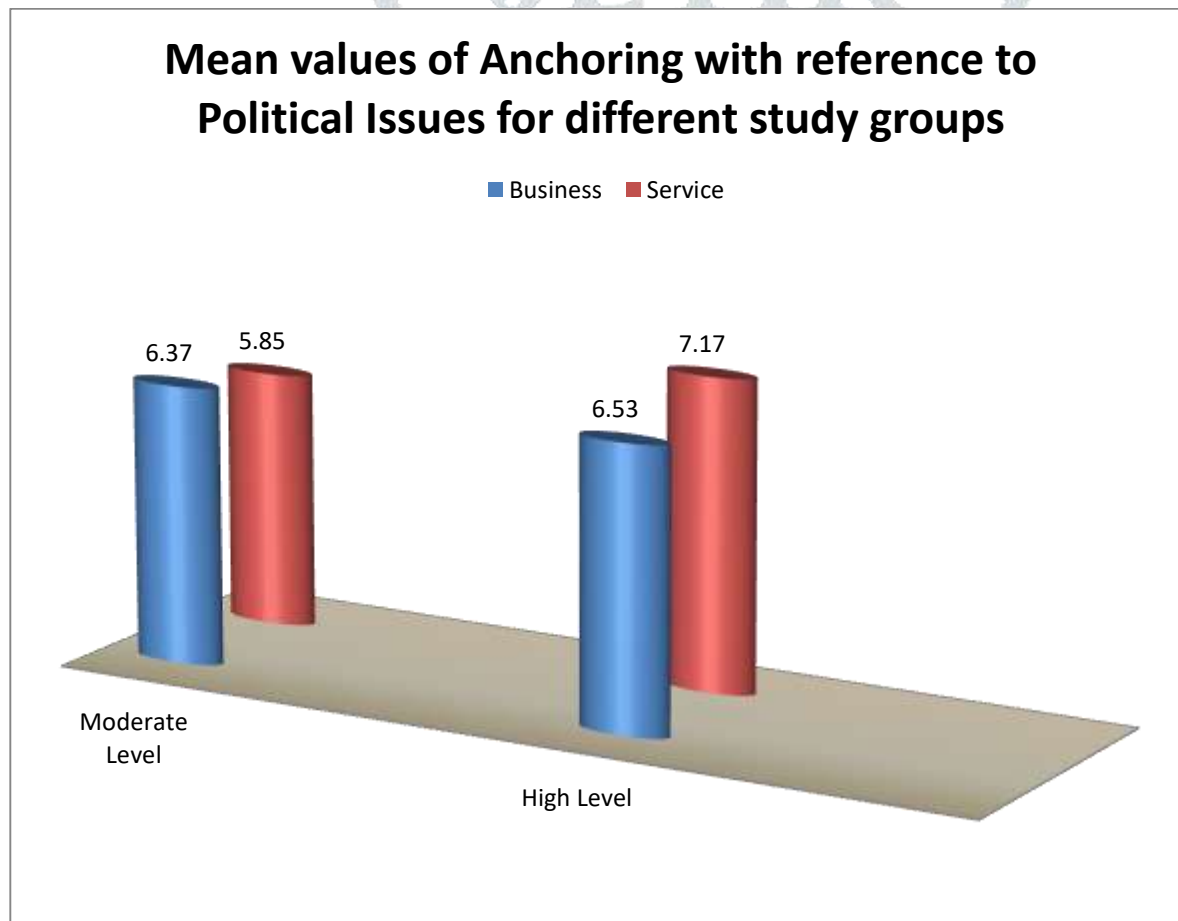


Table 4.21 shows the mean values of various experimental groups in political perspective. Mean of experimental group A1B1 i.e. business class of moderate income level is 6.37, mean of experimental group A2B1 i.e. service class of moderate level is 5.85, mean of experimental group A1B2 i.e. business class of high income level is 6.53 and mean of experimental group A2B2 i.e. service class of high income level is

7.17. According to above results given in table 4.21 and graphical presentation of data in graph 4.15, it can be clearly observed that highest mean is in A2B2 group which represents service class of high income level group. It can be clearly noticed that this group is having highest anchoring effect regarding their investment decision. Lowest over confidence level is in A2B1 group i.e. service class of moderate income group. At moderate income level business class is having high anchoring effect than service class investors. At high income level service class is having high anchoring effect than business class.

Table 4.22 F-Test Two-Sample for Variances between High Income and Moderate Income

F-Test Two-Sample for Variances		
	<i>High Income</i>	<i>Moderate Income</i>
Mean	6.817427386	6.101321586
Variance	4.199861687	4.073759308
Observations	241	227
df	240	226
F	1.030954794	
P(F<=f) one-tail	0.408672395	
F Critical one-tail	1.241674488	

Table 4.22, 4.23 and 4.24 show various results of f test which is calculated between various independent variables at 5% significant level. Table 4.22 shows f test results between high income group and moderate income group, which clearly show that f value is higher than P value at 5% significant level so on this basis null hypothesis mentioned in 3.4.1.3 is rejected. There is significant effect of income level on investment behavior of investors in respect of anchoring effect dimension.

Table 4.23 F-Test Two-Sample for Variances between Business Class and Service Class

F-Test Two-Sample for Variances		
	<i>Business</i>	<i>Service</i>
Mean	6.6875	6.24122807
Variance	4.4333159	3.99001082
Observations	240	228
df	239	227
F	1.111103729	
P(F<=f) one-tail	0.211485886	
F Critical one-tail	1.241569935	

Table 4.23 shows f test values for business class and service class. Results show that f value is greater than P value at 5% significant level so on the basis of results null hypothesis mentioned in 3.4.2.3 is rejected. There is significant effect of occupation on investment behavior of investors in respect of anchoring effect dimension.

Table 4.24 F-Test Two-Sample for Variances between Economic Events and Political Issues

F-Test Two-Sample for Variances		
	<i>Economic Events</i>	<i>Political Issues</i>
Mean	6.481012658	6.458874459
Variance	4.674426089	3.849388293
Observations	237	231
df	236	230
F	1.214329585	
P(F<=f) one-tail	0.069696058	
F Critical one-tail	1.241286501	

Table 4.24 shows f test values for economic events and political issues. Results show that f value is greater than P value at 5% significant level so on the basis of results null hypothesis mentioned in 3.4.3.3 is rejected. There is significant effect of occupation on investment behavior of investors in respect of anchoring effect dimension

4.2.3 Dimension 4- Cognitive Dissonance

4.2.4.1 Cognitive dissonance in context to economic events

Table 4.25 Cognitive dissonance in context to economic events

Income Level (B)	Occupation(A)	
	Business(A1)	Service(A2)
Moderate Level (B1)	Mean=4.48 S.D.=1.80 N=52	Mean=5.07 S.D.=2.04 N=54
High Level (B2)	Mean=4.78 S.D.=1.84 N=68	Mean=6.02 S.D.=1.55 N=63

Graph 4.16 Cognitive dissonance in context to economic events

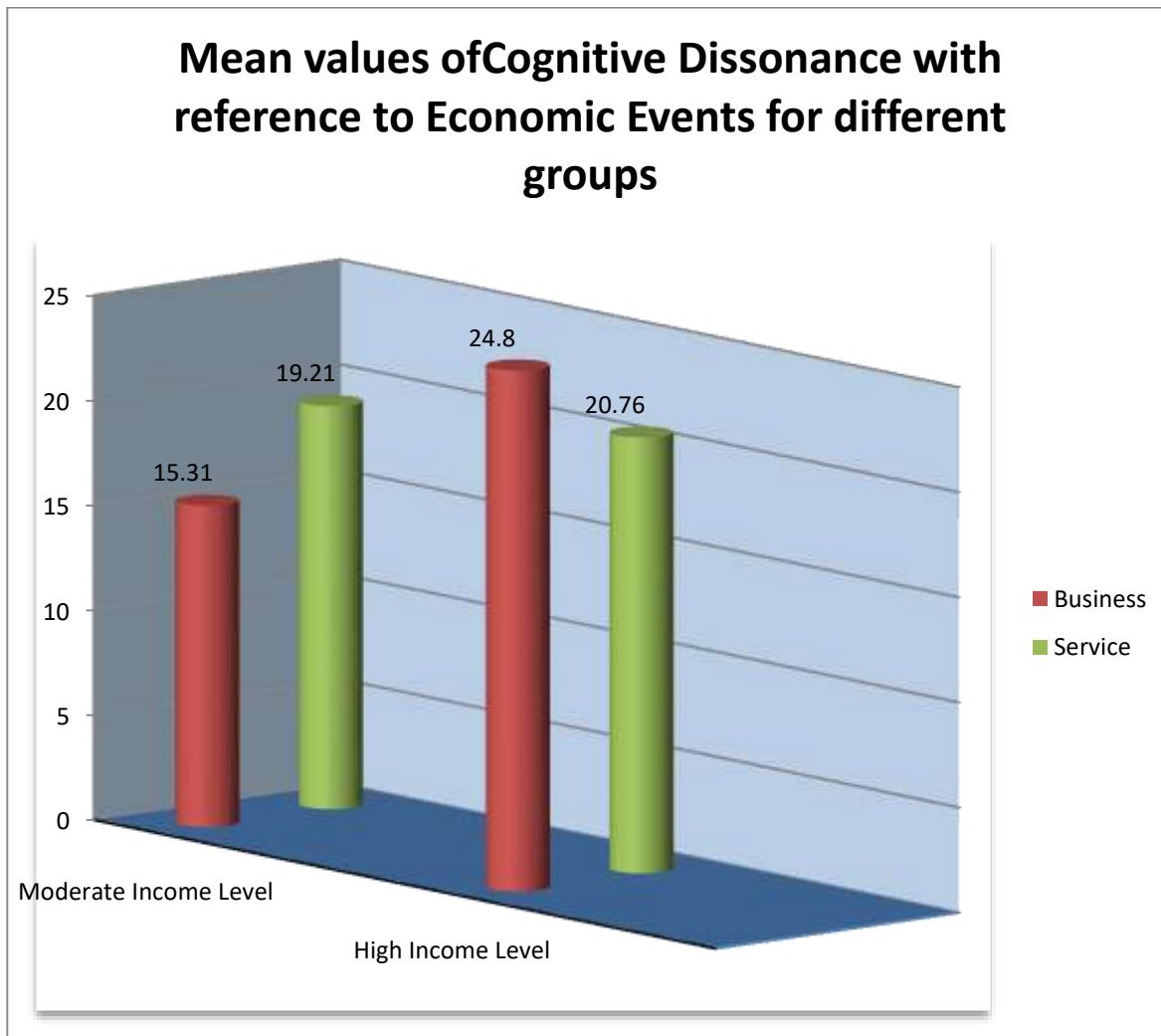


Table 4.25 reveals comparative analysis of dimension four which represents cognitive dissonance. On the basis of mean and standard deviation table 4.25 shows the mean values of various experimental groups in economic perspective. These groups represent occupation as A and A1 as business and A2 as service. On the other hand income level is represented as B and B1 as moderate income level and B2 as high income level. Mean of experimental group A1B1 i.e. business class of moderate income level is 4.48, mean of experimental group A2B1 i.e. service class of moderate level is 5.07, mean of experimental group A1B2 i.e. business class of high income level is 4.78 and mean of experimental group A2B2 i.e. service class of high income level is 6.02. According to above results given in table 4.25 and graphical presentation of data in graph 4.16, it can be clearly observed that highest mean is in A2B2 group which represents service class of high income level group. It can be clearly noticed that this group is having highest cognitive dissonance regarding their investment decision. Lowest over confidence level is in A1B1 which represents business class of moderate income level group. At moderate income level business class is having low level of cognitive dissonance than service class investors. At high income level service class is having level of cognitive dissonance than business class.

4.2.4.2 Cognitive dissonance in context to political issues

Table 4.26 Cognitive dissonance in context to political issues

Income Level (B)	Occupation(A)	
	Business(A1)	Service(A2)
Moderate Level (B1)	Mean=4.73 S.D.=1.78 N=62	Mean=4.64 S.D.=2.07 N=59
High Level (B2)	Mean=4.57 S.D.=1.67 N=58	Mean=6.63 S.D.=1.76 N=52

Graph 4.17 Cognitive dissonance in context to political issues

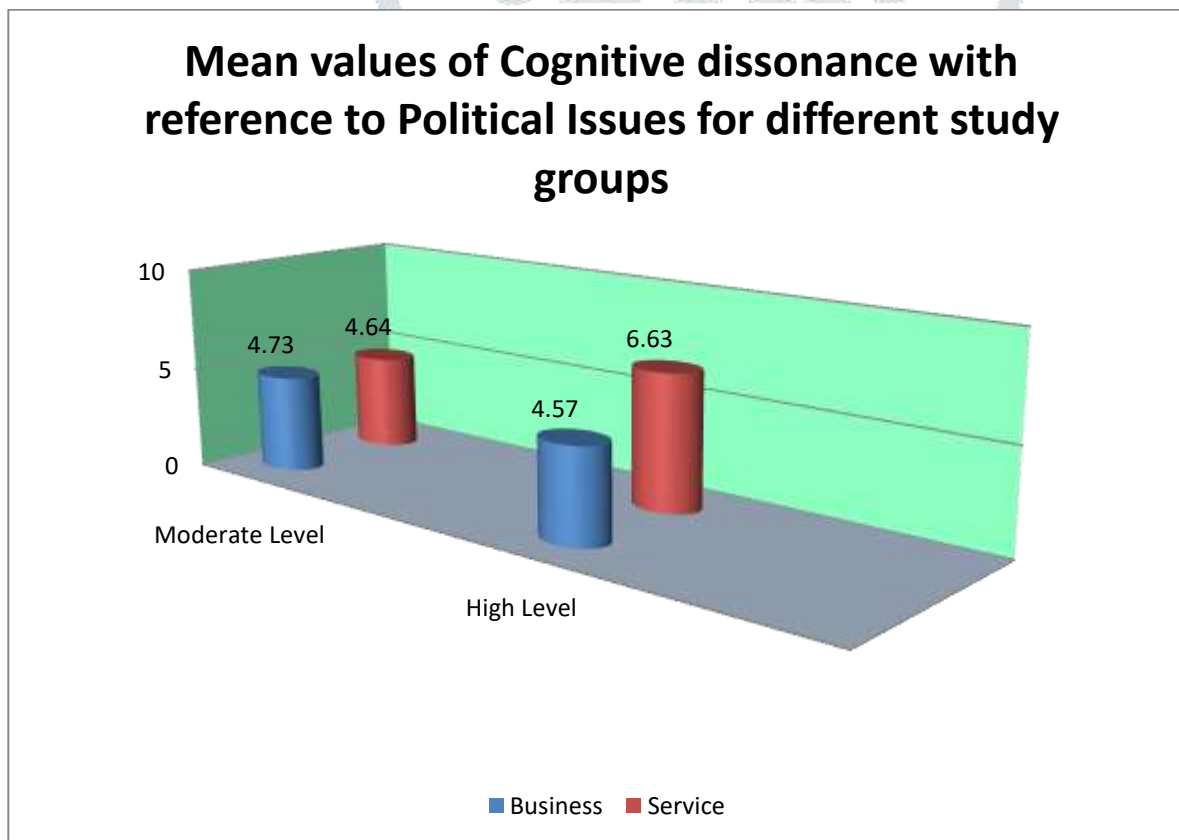


Table 4.26 shows the mean values of various experimental groups in cognitive dissonance perspective. Mean of experimental group A1B1 i.e. business class of moderate income level is 4.73, mean of experimental group A2B1 i.e. service class of moderate level is 4.64, mean of experimental group A1B2 i.e. business class of high income level is 4.57 and mean of experimental group A2B2 i.e. service class of high income level is 6.63. According to above results given in table 4.26 and graphical presentation of data in graph 4.17, it can be clearly observed that highest mean is in A2B2 group which represents service class

of high income group. It can be clearly noticed that this group is having highest cognitive dissonance regarding their investment decision. Lowest over confidence level is in A1B2 group which represents business class of high income. At moderate income level business class is having higher cognitive dissonance than service class investors. At high income level service class is higher level of cognitive dissonance than business class.

Table 4.27 F-Test Two-Sample for Variances between High Income and Moderate Income

F-Test Two-Sample for Variances		
	<i>High Income</i>	<i>Moderate Income</i>
Mean	5.452282158	4.731277533
Variance	3.58208852	3.701804998
Observations	241	227
df	240	226
F	0.967659972	
P(F<=f) one-tail	0.400570483	
F Critical one-tail	0.806018788	

Table 4.27, 4.28 and 4.29 show various results of f test which is calculated between various independent variables at 5% significant level. Table 4.27 shows f test results between high income group and moderate income group, which clearly show that f value is higher than P value at 5% significant level so on this basis null hypothesis mentioned in 3.4.1.4 is rejected. There is significant effect of income level on investment behavior of investors in respect of cognitive dissonance dimension.

Table 4.28 F-Test Two-Sample for Variances between Business Class and Service Class

F-Test Two-Sample for Variances		
	<i>Business Class</i>	<i>Service Class</i>
Mean	4.65	5.578947368
Variance	3.115481172	4.015766288
Observations	240	228
df	239	227
F	0.775812373	
P(F<=f) one-tail	0.026476407	
F Critical one-tail	0.805992954	

Table 4.28 shows f test values for business class and service class. Results show that f value is higher than P value at 5% significant level so on the basis of results null hypothesis mentioned in 3.4.2.4 is rejected. There is significant effect of occupation on investment behavior of investors in respect of cognitive dissonance.

Table 4.29 F-Test Two-Sample for Variances between Economic Events and Political Issues

F-Test Two-Sample for Variances		
	<i>Economic Event</i>	<i>Political Issues</i>
Mean	5.109704641	5.095238095
Variance	3.555710506	3.990890269
Observations	237	231
df	236	230
F	0.89095672	
P(F<=f) one-tail	0.189233509	
F Critical one-tail	0.8058962	

Table 4.29 shows f test values for economic events and political issues. Results show that f value is higher than P value at 5% significant level so on the basis of results null hypothesis mentioned in 3.4.3.4 is rejected. There is significant effect of occupation on investment behavior of investors in respect of cognitive dissonance.

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