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# An Empirical Study of Illusion of Control and Self-Serving Attribution Bias, Impact on Investor's Decision Making: Moderating Role of Financial Literacy

Shakir Ullah
MS Scholar Mohammad Ali Jinnah University, Islamabad Pakistan

**Abstract**
According to traditional financial theory investors are supposed to be rational and make decisions that reflect all available information but prospect theory explained a number of biases which affect the investor's behavior and investors lead to irrational decision making. This study aims to investigate the influence of behavioral biases (self-attribution, illusion of control) on investment decisions with the moderating role of financial literacy in context of Pakistan. The relationship was examined by administering a questionnaire and by collecting empirical data from investors about their own perception of these biases. Questionnaire was distributed among the sample of 220 investors and two statistical tools correlation analysis and regression analysis were used to analyze the collected data. The study was found that the Illusion of control bias has significant positive impact on individual investor investment decision and no support were found for the positive impact of self-serving attribution bias on investment decision. It is also found that financial literacy moderates the relationship between illusion of control bias and investment decision so that it weaken the relationship. The findings of this study will helpful for investors to identify these biases which interrupted his decision making level and then formulate different strategies to overcome these biases and reduce irrational behavior. Other implications and limitations of the study are also discussed.
***Keywords:*** Illusion of Control Bias, Self-Serving Attribution Bias, Financial Literacy, Investment Decision, Pakistan.

## Introduction

According to traditional finance theory individual investors are supposed to be rational in making investment decision with the consideration of optimal returns but prospect theory explained that an investor behavior affected by number of biases which make them to act irrationally (Kahneman & Tversky, 1979). Individual rationality refers to two things: first, individual update their belief on the basis of new information received and the second is to make decision on the basis of their beliefs and not to consider new information (Benartzi & Thaler, 2002). Many researchers have been explained that Peoples make decision in irrational fashion. Investor act irrationally while investing in stock exchange (Elton, Gruber, & Busse, 2004). Peoples use their intuitive abilities instead of technical analysis for making investment decisions (Rubaltelli et al., 2010). According to Tversky and kahneman (1974) decision about uncertain events mostly depends upon individual liking or disliking and investor decision is effected by so many biases. In behavioral finance normal peoples supposed to be a rational and cognitive error free like illusion of control and attribution errors (Cheng, 2007**).**

There are number studies available on biases which effect investment decision. This study is an attempt to explain two most important biases i.e. illusion of control and self-serving bias with moderating role of financial literacy. An illusion of control was defined as an expectancy of a personal success probability in appropriately higher than the objective probability would warrant (Langer 1975, p.313). Investor overweight the selected choices form available choices in which he liked intrinsically (Fellner, 2009**).** The study of Grou and Tabak (2008) suggested that peoples agree to invest proportionately in the situation where they can control and the situation where they don't have control.

Self-serving attribution bias was explained by many researchers. According to Heider's (1958) self-serving attribution bias represents people's propensity to claim an irrational degree of credit for their success and the irrational denial of responsibility for failure. Many researchers argued that peoples and management take the credit of positive results or behavior and let the bad or negative results on external factors (Miller & Ross, 1975; Bradely, 1976**;** Larwood & Whittaker, 1977; Clapham & Schwenk, 1991; Clatworthy & Jones, 2003; Aerts, 2005). Another study results shows that the management take the credit of good performance of company and deny taking the responsibility of bad performance of company (Keusch, Bollen, & Hassink, 2012).

Financial literacy can be used an important buffers to reduce the probability of biased decisions and help the investor in making rational decisions. An investors who is more literate about financial market can make better and less biased decision and an investor who are less literate about financial market there would be more chance of bad investment decisions. Jappeli and Padula (2013) reported that most of the individual investors lack the basic knowledge of economics and finance like behavioral finance, risk diversification, Inflation and interest compounding due to which there are more chances to indulge in investment biases. An individual should have the sufficient knowledge and skills to make effective decision. Rooij, Lusardi, & Alessie (2007, 2011) argue that

financial literacy effect investment decision mechanism and help the investor to make unbiased investment decision. They reported that peoples, who do not have knowledge of capital market, keep away from that and make decision on the basis of peer suggestions.

A reasonable amount of studies are conducted on the relationship of biases and investment decision but there is still gap to introduce new moderators and mediators in order to avoid irrational decisions. Financial literacy is an important moderator of the present study which is not tested before in such underlying mechanism. Most of the studies in developed countries have linked biases with the investment decision, but there are fewer empirical studies conducted in developing countries including Pakistan. Pakistani culture is different from the western culture, so there is a need of empirical research on these biases to reduce the irrational decision making behavior of individual investors.

This study has theoretical as well as contextual contribution. Theoretically this paper will contribute in prospect theory which represents the investors behavioral are linked with their prospects mean biases and contextually, this topic was first discussed in Pakistan's culture and context. Pakistan includes in developing countries where financial markets are inefficient. Investors get abnormal gains as well as loss due to several reasons. Individual prefer to invest in local stocks in which they are familiar (Massa & Simonov, 2006; Seasholes & Zhu, 2010). The most important reason of these abnormal responses of market is investor's irrationality.

The present study research objective is to explore the effect of self-attribution and illusion of control bias on investor decision. The effect of these biases on investment decision may be strengthen or weaken due to financial literacy of investor.

## Literature Review

The literatures on traditional finance suggest that investor maximize the return by making rational investment decision which is based on expected utility theory (Savage 1953). But behavioral finance contradict and explains an investor's decision effected by number of behavioral factors like cognitive and psychological factors which move them to act as irrationally (Kahneman & Tversky, 1979; Fama, 1998; Ritter, 2003; Tiwana et al., 2007). The study of Thaler (1994) documented that there are two types of investor in the financial markets; the peoples who are making rational decisions and the peoples who make decisions on the basis of their prediction which makes them irrational. According to Tversky (1972) individual tend to behave differently when he has more than one alternative and make decision not only on the basis of mental accounting butt careful analysis for decision making.

### Illusion of Control Bias and Individual Investment Decision

An illusion of control was defined by Langer (1975) as an expectancy of a personal success probability in appropriately higher than the objective probability would warrant. Investor overweight the selected choices form available choices in which he has interested intrinsically (Fama 1998; Fellner, 2009)**.** The study of Grou and Tabak (2008) suggested that peoples agree to invest proportionately in the situation where they can control and the situation where they don't have control. Individual behave differently in different situations. The study conducted by Martin, Abramson and Alloy (1984) on college students and found that people in depressed position shows illusion of control.

Theoretically there is very least studies available which explain the impact of illusion of control bias on individual investment decisions. Illusion of control bias allows individuals as well as corporations to make decisions which they don't control. The study of Grou and Tabak (2008) shows that the respondents did not want to invest which he did not like, even he had control over the situations. Peoples preferences developed on the basis of what they believe and having knowledge about the situations (Heath & Tversky 1991; Alloy & Abramson, 1982). The research of Durand (2003) reveals that organization illusion of control creates biasness in future investments decisions.

Another study of Thaller (1992) explains that gambler charge premium on the basis of their belief and perception about the result of tossing coin in the game. Investors usually in the market expect a greater return about an event which follows their preferences. Individual while making investment decision forgets the effect of risk and underestimate the result which opposed their preferences and overestimate the result which confirm their preferences (Schwenk, 1984; Schweitzer & Cachon, 2000; Gino, Sharek, & Moore 2011). Investors decisions in financial market biased with many cognitive biases like illusion of control while making choose putt and call option decisions (Miller & Shapira, 2004).

Illusion of control was the treated as normal belief in peoples (Rudski, 2004) and illusion of control peoples underestimate what they don't like and over estimate what they liked (Thompson, Armstrong & Thomas1998). These all studies shows that investors decision in making investment effects with illusion of control bias (Thompson, Armstrong, & Thomas1998).

*Hypothesis 1: There is significant positive relationship between illusion of control bias and investment decisions.*

**Self -serving attribution bias and Investment Decision**

After prospect theory, there were huge researches conducted to explain the behavioral biases which effect individual while making investment decision. Self-serving attribution bias is one of the most important bias which effect individual investment decision. Self-serving attribution bias was explained in number of studies. According to Heider's (1958) self-attribution bias represents peoples propensity to claim an irrational degree of credit for their success and the irrational denial of responsibility for failure.

Many researchers argued that peoples and management take the credit of positive results or behavior and let the bad or negative results on external factors (Miller & Ross, 1975; Bradely, 1976**;** Larwood & Whittaker, 1977; Clapham & Schwenk, 1991; Clatworthy & Jones, 2003; Aerts, 2005). Another study results shown that the management take the credit of good performance of company and deny taking the responsibility of bad performance of company (Keusch, Bollen, & Hassink, 2012). While attributing the factor of success and failure peoples makes self-serving attribution bias (Bradley, 1978; Shepperd, Malone, & Sweeny, 2008). The result of study conducted by Doukas and Petmezas (2007) shows that managers while making merger and acquisition decisions, make them overconfidence which result in self-serving attribution bias.

Investment decisions of manager of organization biased with self-serving attribution biases while they are making decision about acquisition investment and other decisions. Managers overestimate internal factor and underestimate external factor while making investment decision which produce greater return (Libby & Rennekamp, 2012).The study of Krusemark, Keith and Clementz (2008) conducted on 20 participants suggested that peoples makes self-serving attribution bias while attributing the success and failure factors. Management takes the credit of positive outcome of company performance and denial to take the responsibility of failure of their decisions (Clapham& Schwenk 1991). Literature available on self-serving attribution bias suggested that individual while making investment decisions effected by self-serving attribution bias (Hales, 2007) and peoples prefer to invest in the stock which generally linked to their preferences of positive outcomes.

*Hypothesis 2: There is significant positive relationship between self-serving attribution bias and individual investment decision.*

**Financial Literacy and Individual Investment Decision**

Individuals having more knowledge about financial matters can make better investment decision as compare to individuals having not sufficient knowledge about financial matters. Jappeli and Padula (2013) reported that most of the adults lack the basic knowledge of economics and finance like behavioral finance, risk diversification, Inflation and interest compounding due to which there are more chances to indulge in investment biases. Rooij, Lusardi and Alessie (2007, 2011) argue that financial literacy effect investment decision mechanism and help the investor to make unbiased investment decision and they also reported that people, who do not have knowledge of capital market, keep away from that and make decision on the basis of peer suggestions.

Number of empirical studies suggested that financial literacy helps the investor to make better decisions regarding allocation of resources and managing to maximize their return. The study of Banks and Oldfield (2007) suggested that low literacy will result in poor allocation of resources, managing lower return and poor risk minimization. Many studies reveals that financial literacy positively affect the investment decision and help people to earn maximum return from their investment (Ballantine & Stray, 1998; Lusardi & Mitchell, 2007; Lusardi, Mitchell, & Curto, 2010; Jappeli & Padula, 2013). Another study conducted by Chen and Volpe, (1998) shows that 53% of college students have low financial literacy and they made wrong investment decisions.

*Hypothesis 3: Financial literacy is positively associated with investment decision*

**The Moderating Role of Financial Literacy between Illusions of Control Bias and Investment Decision**

Due to the illusion of control bias individuals overestimate their personal abilities for achieving a desired outcomes but in realty he can't achieved and this illusion leads individuals to poor investment decision (Rudski, 2004).The prospect theory explained several other biases which effect the individual investment decision and leads to irrationality but the effect of the biases not always with the same intensity because several empirical studies suggested that the investment decision can make more better in case of having more knowledge and information about the financial matters. Rooij, Lusardi and Alessie (2007, 2011) documented that financial literacy assist the individuals in making investment decision and help them to make unbiased decisions. Lusard and Mitchell (2007) also documented that financial literacy positively affect the investment decisions which is make by investors in stoke markets. So it can be concluded that the financial literacy effect the relationship of cognitive biases and investment decision.

*Hypothesis 4: Financial literacy moderate the relationship between illusion of control bias and individual investment decision, so that its weaken the relationship.*

**The Moderating Role of Financial Literacy between Self –Serving Attribution Bias and Investment Decision**

Tversky and kahneman (1974) documented that the investment decision is affected by many biases. Investment decisions by mangers regarding acquisition and merger affected by self-serving attribution bias (Doukas & Petmezas, 2007). The investment decision can be made efficient if individuals have information regarding financial markets trends and activities which lead to financial literacy like Mitchell and Curto, 2010 suggested that the financial literate individuals can make better investment decisions and maximized their returns. Investors having lack of understanding about financial mattes makes poor investment decisions and also make poor allocation of resources (Banks & Oldfield, 2007). Financial literacy plays a buffer role and reduced the effect of psychological biases on investment decision.

*Hypothesis 5: Financial literacy moderate the relationship between self serving attribution bias and individual investment decision, so that its weaken the relationship.*

**Theoretical Framework**

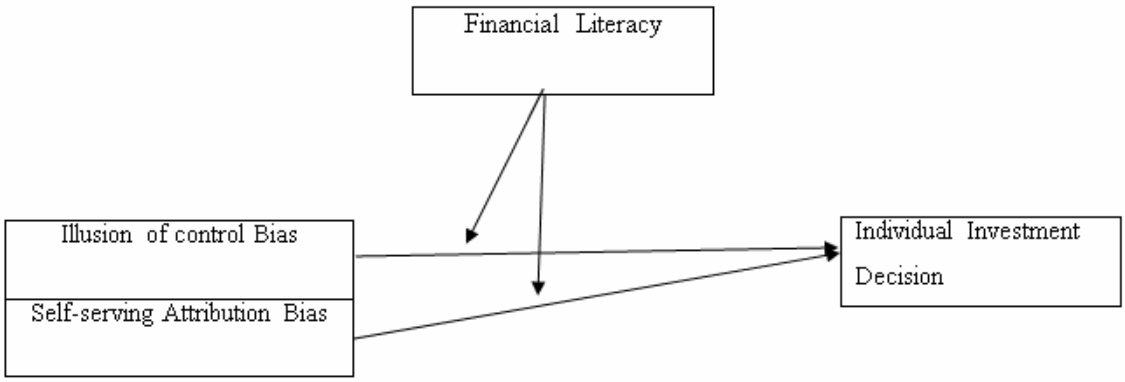



**Figure 1**: Model of the Study

**Research Methodology**

**Population, Sample and Data Collection**

The data for this research was collected through self administered questionnaire from investors of Islamabad Stoke Exchange and several brokerage houses of Islamabad and Peshawar. Total 220 questionnaires were distributed and 167 were returned, 95% of them were males and 5% of them were females, making the response rate approximately 75 percent. A 5-point likert scale was used to assess the outcomes with anchors of 1 = Strongly Disagree, 2=Disagree, 3=Not Sure, 4=Agree and 5 = Strongly Agree. Participation of survey was voluntarily and participants were assured of confidentiality and anonymity of responses. Collected data was analyzed through correlation and linear regression on SPSS.

**Instrumentation**

Following instruments were adopted and used in this research:

**Illusion of Control Bias**

The scale used to measure the illusion of control bias was adopted from Simon, Houghton and Aquino (2000) and Langer (1975). The scale consists of 3 items included "Which ticket you would be most likely to keep". Cronbach's Alpha reliability of this scale was found .671 and acceptable for number of 3 items.

**Self- Serving Attribution Bias**

Self-serving attribution bias was measured by scale adopted from Greenberg, Pyszczynski and Solomon (1982). The scale consists of 5 items included "To what extent was the amount of effort you put into taking the task responsible for your performance". Cronbach's Alpha reliability of this scale was found .857.

**Investment Decision**

Scale for investment decision was adopted from Hira and Loibl (2008). The scale consists of 7 items included "I prefer to save money because I am never sure when things will collapse and I will need money". Cronbach's Alpha reliability of this scale was found .747.

**Financial Literacy**

To measure financial literacy scale was adopted from Cude et al (2006) and Hira and Loibl (2005).The scale consists of 7 items included "I have better understanding of how to invest my money". Cronbach's Alpha reliability of this scale was found.692.

**Control Variables**

Age, gender and qualification were the demographics of the present study and significant difference were found in their means. One Way ANOVA was used for their mean comparisons and all the three

demographics age, gender and qualification were controlled during the analysis. Control variables of the study were controlled in the first step of regression analysis to see the real effect of independent variables on the outcome.

## Findings

### Correlation analysis

Correlation analysis is used to examine the association between independent, dependent and moderating variables.

TABLE 1

**Descriptives, Correlation and Reliabilities**

| | Mean | S.D. | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|
| 1 ID | 3.26 | .71 | (.74) | | | |
| 2 ICB | 4.03 | .72 | .389** | (.67) | | |
| 3 SAB | 4.09 | .67 | .220* | .363** | (.85) | |
| 4 FL | 3.23 | .66 | .317* | -.045 | .265 ** | (.71) |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
N=167: Control variables= Age, Gender, Qualification: ID=Investment Decision, ICB= Illusion of control Bias, SAB= Serving Attribution Bias, FL=Financial Literacy

Table 1 indicates the correlation between illusion of control bias, self- serving attribution bias, investment decision and financial literacy. Correlation analysis shows that there is strongly positive association between illusion of control bias and investment decision with the values of (r = .389**, p = .004). Significant and positive correlation were also found between self-serving attribution bias and investment decision with the values of (r = .220*, p =.041). Furthermore the values of (r = .317, p = .032) indicates that there is significant positive association between financial literacy and investment decision. Financial literacy is negatively correlated with illusion of control bias with the value of (r = -.045). Illusion of control bias and self-serving attribution bias are positively and significantly associate with each other with the values of (r = .363**, p = .002).

Table 1 also shows that investment decision has the lowest and self-serving attribution bias has the highest mean. It was also found that illusion of control bias has the highest standard deviation (.72) and financial literacy has the lowest standard deviation. Cronbach's Alpha reliabilities were also found above .7 except the illusion of control bias which is .67.

### Regression Analysis

Regression analysis is used to examine the impact of independent variables on dependent and the impact of moderation.

**TABLE 2**
**Regression Analysis with Moderation**

| | Investment Decision | | |
|---|---|---|---|
| **Predictors** | **β** | **$R^2$** | **$\triangle R^2$** |
| **Step 1** | | | |
| Control variables | | 0.80 | |
| **Step 2** | | | |
| Illusion of Control | 0.287** | | |
| Serving Attribution | 0.076 | | |
| Financial Literacy | 0.178* | 0.085 | 0.06 |
| **Step 3** | | | |
| ICBXFL | -0.069 * | | |
| SABXFL | -0.034 | 0.166 | 0.087 |

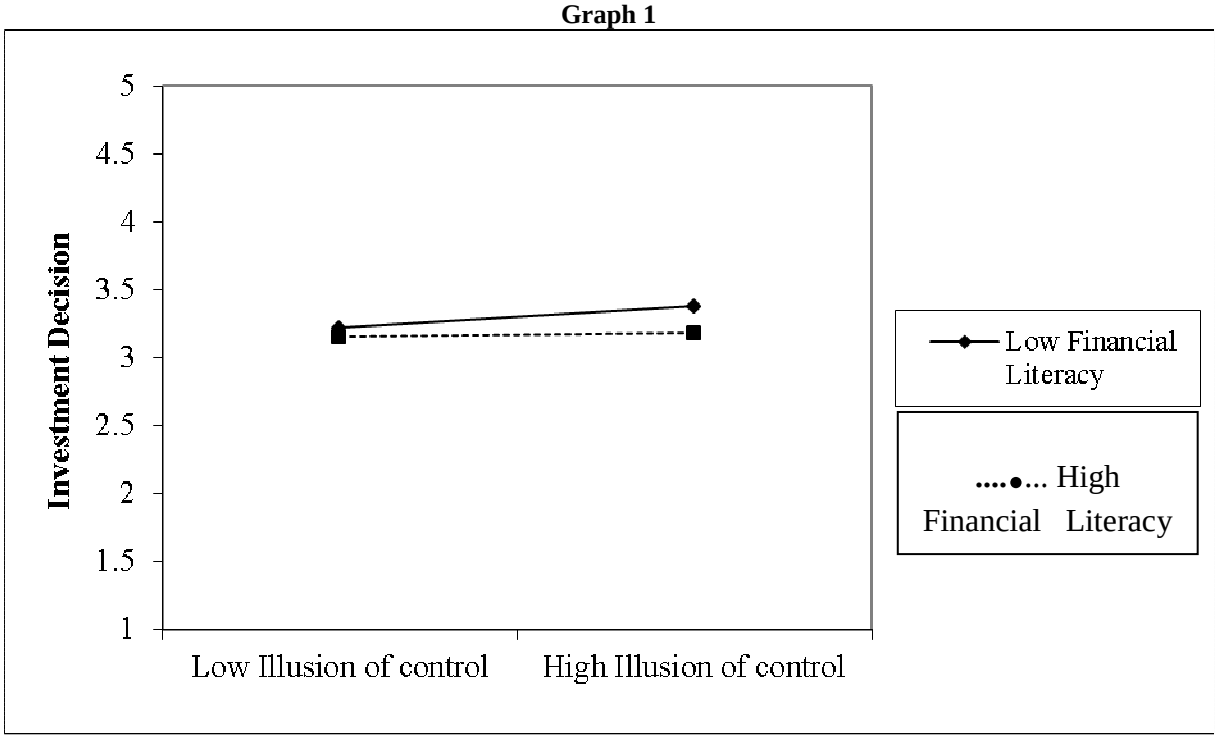
*N=167: *P<.05, **P<.01, ***P<.001: Control variables: Gender, Age and Qualification*

The regression and moderated regression analysis were used to examine the impact of illusion of control bias and self-serving attribution bias on investment decision. Table 2 indicates that Illusion of control bias has the significant positive impact on investment decision with the value of $\beta = .287^{**}$ and $p < .01$ this lend strong support to the first hypothesis of study. The regression analysis is not support the H2 of the study because there is no significant relationship were found between self-serving attribution bias and investment decision. Financial literacy has the significant positive impact on investment decision with the value of $\beta = .178^{*}$ and $p < .05$ this finding support the H3 of study. The interaction term $\beta = -.069^{*}$ and $p < .05$ indicates that financial literacy moderate the relationship between illusion of control bias and investment decision and this lend strong support to H4 and its weaken the relationship because of its negative effect. It was also found that financial literacy does not moderate the relationship between self-serving attribution bias and investment decision because in regression analysis for moderation there is no support were found for H5.

**Moderation Analysis**

**Graph 1**




The steeper slope in graph shows that when the level of financial literacy is low, the relationship between illusion of control bias and investment decision will be stronger. The flattest slope in the graph shows that when the level of financial literacy is high then the relationship between illusion of control bias and investment decision will be weaken and this lend strong support to H4.

**Discussion**

The current research examined five hypotheses regarding the impact of illusion of control bias and self-serving attribution bias on investment decision and the moderating role of financial literacy is unique relation of this study in context of Pakistan. There is significant positive association between illusion of control bias and investment decision was the first hypothesis of study and it is strongly supported by the regression and correlation analysis. This finding of the study is consistent with finding of Miller and Shapira (2004) in which he argue that investors are biased with illusion of control bias while making investment decision in stock markets. Literature strongly supports that illusion of control bias affect investment decisions. Individuals overestimate the results of their preferences while making investment decision (Schwenk, 1984; Schweitzer & Cachon, 2000; Gino, Sharek& Moore 2011). Durand (2003) also documented that illusion of control bias effect the future investment decisions. It can be concluded that the investors make investment decisions on the basis of their skills and preferences to control the future uncertain events and they overestimate their skills and abilities.

The second hypothesis of study was, there is significant positive association between self-serving bias and investment decision and there is no support was found for this hypothesis during the analysis. This finding is opposite to the findings of Doukas and Petmezas (2007) and Hales (2007) in which they documented that investment decisions are effected by overconfidence which result in self-serving attribution bias. Managers overestimate internal factor and underestimate external factor while making investment decision (Libby & Rennekamp, 2012). The inconsistency with literature may be due to the cultural differences and this results of

the study shows that the investors make decisions on the basis of their beliefs and informations regarding a particular situation and they don't relates the cognitive biases while making investment decisions.

Third hypothesis was supported by the results of regression and correlation analysis that there is significant positive association between financial literacy and investment decision. This finding of the study is also consistent with literature. Rooij, Lusardi and Alessie (2007, 2011) argue that financial literacy effect investment decision mechanism and help the investor to make unbiased investment decision. The study of Banks and Oldfield (2007) suggested that low literacy will result in poor allocation of resources. Many studies reveals that financial literacy positively affect the investment decision and help people to earn maximum return from their investment (Ballantine & Stray, 1998; Lusardi & Mitchell, 2007; Lusardi, Mitchell, &Curto, 2010; Jappeli&Padula, 2013). It means that financial literacy helps the investors to make efficient and rational decisions and knowledge regarding financial activities contributes to investment decisions of investors in stoke markets.

Financial literacy moderate the relationship between illusion of control bias and investment decision was the forth hypothesis of study and it is also strongly supported by the findings of regression analysis for moderation. Rooij, Lusardi and Alessie (2007, 2011) documented that financial literacy assist the individuals in making investment decision and help them to make unbiased decisions. This finding also consistent with the study of Lusard and Mitchell (2007) in which they documented that financial literacy positively affect the investment decisions and reduced the effect of cognitive biases. It means that financial literate investors make more rational and efficient decisions due to understanding of financial matters and they effect of cognitive biases reduced due to the high level of financial literacy.

Fifth and last hypothesis of the study, financial literacy moderate the relationship between elf-serving attribution bias and investment decision was not supported by the findings of the regression analysis for moderation. This finding of the study shows that financial literacy not assists the investors while making investment decision. This finding is opposite to the results of past studies like Doukas and Petmezas (2007) argue that the investment decisions by mangers regarding acquisition and merger affected by cognitive biases which can be reduces by knowing more about financial markets principles and trends. This finding may be opposite to the literature due to cultural factors like Pakistan is a developing country and investors may ignore the skills and knowledge of financial matters while making investment decisions and they makes decisions on the basis of their preferences. They don't prefer to know about the financial markets principles and trends for their investment decisions making process and make decisions on their personal beliefs and preferences.

**Managerial Implications**

This research will assist the individual and as well as institutional investors to know about the effects of cognitive biases in decision making process. Brokerage houses and other financial agencies can also get a valuable support from these findings while making policies regarding financial markets activities and their business portfolios. Individual investors in collectivist society like Pakistan can also identify cultural hurdles to make them aware of all possible failure in the way of best portfolio investment selection. Authoritative bodies of financial markets operations can plane and create awareness and search about the possible solutions to overcome the effects of these factors in decision making processes.

**Limitations**

This study is focuses on the investors located in Islamabad and Peshawar, small sample size of this study is also not sufficient for generalized conclusion due time constraints. This research comprises of studying the impact of only two variables illusion of control bias and self-serving attribution bias on individual investment decision. Data was collected only through questionnaire and using convenient sampling technique.

**Directions for future research**

Future research can be conducted with large sample size and collect data from other cities as well to make more generalized conclusion. Further studies can use questionnaire and interview as well for collecting more reliable data. Future researchers can also study the impact of other variables e.g. emotional quotient and other investor sentiments with new moderation and mediation like locus of control and self efficacy.

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**Appendix: 1**

**Questionnaire**

**Dear Respondent,**

I am a student of MS Management Sciences at Mohammad Ali Jinnah University Islamabad. I am conducting a research on impact of behavioral biases on individual investment decisions. You can help me by completing the attached questionnaire, which I think you will find quite interesting. I appreciate your participation in my study and I assure that ***your responses will be held confidential*** and will only be used for education purposes

**Section 1: Demographics**

Gender

| **1** | **2** |
|---|---|
| Male | Female |

Age

| **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|
| 18-25 | 26-33 | 34-41 | 42-49 | 50 and Above |

Qualification

| **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|
| Matric | Bachelor | Master | MS/M.Phil | PhD |

Experience

| **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|
| 5 and Less | 6-13 | 14-21 | 22-29 | 30 and Above |

 

**Section 2: Illusion of control**.

If you have an opportunity to invest in lottery tickets. Ticket "A" (With your Lucky Number), Ticket "B" (Available for randomly) and Ticket "C" (Computer Generated Number).Please answer the following questions.

| Self-serving Attribution bias. | | 1 Strongly Disagree | 2 Disagree | 3 Not Sure | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| **IOC1** | You will Prefer to ticket A (Lucky Number). | | | | | |
| **IOC2** | You will Prefer to ticket B (Available for Randomly). | | | | | |
| **IOC3** | You will Prefer to ticket C ( Computer Generated Number) | | | | | |

**Section 3: Self-serving Attribution bias.**

How much you are responsible. Select form the following options:

| Self-serving Attribution bias. | | 1 Not at all Responsible | 2 somewhat Responsible | 3 moderately Responsible | 4 Very Responsible | 5 Extremely Responsible |
|---|---|---|---|---|---|---|
| **SSA1** | To what extent was your ability to responsible for your performance of any task? | | | | | |
| **SSA2** | To what extent was the amount of effort you put into taking the task responsible for your performance? | | | | | |
| **SSA3** | To what extent was the ease or the difficulty of the task responsible for your performance? | | | | | |
| **SSA4** | To what extent was the luck responsible for your performance on the task? | | | | | |
| **SSA5** | If assigned were used for your evaluation, how important was it for you to do well? | | | | | |

**Section 4: Investment Decisions.**

Please insert a check mark **(√)** in the appropriate column to indicate whether you agree or disagree with each of the following statements:

| Investment Decisions | | 1 Strongly Disagree | 2 Disagree | 3 Not Sure | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| **ID1** | Money is most important goal of my life. | | | | | |
| **ID2** | It is the more satisfying to save than to invest money. | | | | | |
| **ID3** | Stock market is unpredictable that's why I would never invest in stocks. | | | | | |
| **ID4** | I would invest a larger sum of money in stock. | | | | | |
| **ID5** | The uncertainty of whether the market will rise or fall keeps me from buying stocks. | | | | | |
| **ID6** | I prefer to save money because I am never sure when things will collapse and I will need money. | | | | | |
| **ID7** | I budget my money very well. | | | | | |

**Section 5: Financial Literacy**

Please insert a check mark **(√)** in the appropriate column to indicate whether you agree or disagree with each of the following statements:

| Financial Literacy | | 1 Strongly Disagree | 2 Disagree | 3 Not Sure | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| FL1 | I have better understanding of how to invest my money. | | | | | |
| FL 2 | I have better understanding of how to manage my credit use. | | | | | |
| FL 3 | I have a very clear idea of my financial needs during retirement. | | | | | |
| FL 4 | I have the ability to maintain financial records for my income and expenditure. | | | | | |
| FL 5 | I have little or no difficulty in managing my money management, investments, and budgeting. | | | | | |
| FL 6 | I have better understanding of financial instruments (eg. bonds, stock, T-bill, future contract, option and etc.) | | | | | |
| FL 7 | I have the ability to prepare my own weekly (monthly) budget. | | | | | |