

Herding Behavior in the Stock Market of Pakistan

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Abstract

This study aims to investigate the impact of Herding Behavior on Investment Decisions in Pakistan Stock Exchange (PSE) with a moderating role of Financial Literacy & Event Uncertainty. In order to examine this relationship, a total of 200 questionnaires were distributed among the investors, out of which 177 investors returned the fully filled questionnaires on the basis of which results are generalized by using correlation and regression analysis. The previous studies reveal the presence of herding behavior in emerging markets of Asian Economies. However, the findings of this study also endorse the fact that herding exists in Pakistan Stock Exchange and it turns intense with the higher level of uncertainty while financial literacy is reported to mitigate its effects. Adequate levels of financial knowledge and skills are the key prerequisite for investors to achieve optimal outcomes in this complex decision-making environment. More precisely, increase in financial literacy weakens the relationship between herding behavior and investment decisions while event uncertainty is responsible for strengthening the effects of herding behavior as investors prefer to herd when they are uncertain about the future events. Findings of this study can be supportive for policy makers to formulate different strategies on government level for refinement of economy from these biases and provide guidelines to the investors to overcome these biases in personal capacity as well. The scope of the study is limited because only one bias is addressed here while there are a number of biases that can significantly affect the investment decisions. Moreover, study is carried out by incorporating two key factors, "event uncertainty" and "financial literacy"; to assess the effects of herding behavior on stock market whereas other factors like informational inefficiencies, noise traders, market sentiments, high trade volume, emotional and social influence, economic environment, flexible prices, decision of predecessor and high incentive cost also have great influence on the investors so future researchers can consider these factors.

Key Words: Herding Behavior, Event Uncertainty, Financial Literacy

Introduction

The socio-economic factors influencing the investment decision process may include an element of uncertainty, level of income, invention and innovation, growth of population, state policy, political climate, etc. According to traditional finance theory, individual investors are supposed to be rational and well informed while making an investment decision with the consideration of optimal returns. But in developing countries like Pakistan, the complexity of the financial environment is increasing and is exceptionally volatile due to uncontrollable external socio-political factors such as security threats, terrorism, inflation, unethical practices, corruption, energy crises and political instability. This has led to the failure of the assumptions of traditional finance approach in Pakistan. Investors in Pakistan are not

able to take rational decisions, predominantly due to this macro socio-political uncertainty and the lack of publicly available information, because of unethical practices and corruption. Therefore, investors in Pakistan rely heavily on tacit knowledge and have little to go on explicit knowledge, diminishing their ability to make valid rational investment decisions. To address this shortcoming in traditional finance approach, the behavioral finance approach plays a seminal role. It is well accepted that decision makers are often influenced by multiple psychological biases that distort their decision making and economic outcomes (Barber & Odean, 2001, 2002; Kahneman & Riepe, 1998; Raghunathan & Corfman, 2006). Herding is one of the cognitive biases because, for many reasons including cognitive constraints, environmental cues and/or framing effects, individuals may be following the ill-judged decisions of a group (Baddeley, Bayliss, Jarrold, & Leigh, 2005; Tversky & Kahneman, 1974).

Modern psychological and economic research has identified herd behavior in humans to explain the phenomenon of large numbers of people acting in the same way at the same time. Keynes (1930) conceived herding as a response to uncertainty and individuals' perceptions of their own ignorance: people may follow the crowd because they think that the rest of the crowd is better informed. From the viewpoint of Finance, herding is a collective irrationality of investors originated from copycat behavior that can generate instability in financial markets and the investor may be prone to making errors of judgment, being inconsistent and irrational in their decisions. In Finance, these judgments and decisions pertain to the composition of individual portfolio, the choices of the securities, the expectations, the investment style, the horizon of investment, the turnover of the portfolio and the way investors react to the news. All human beings, individual investors use heuristics in the making of those judgments and decisions (Abreu, 2014).

Herding behavior is one of the major factors contributing to the financial meltdown which led the financial and real estate markets of the world to immense financial disaster.

Hott (2012) explained that herding behaviors are formed by those who are "imperfectly informed" and "learn from the decisions" of others and that people tend to "overestimate the likelihood of an event" to occur to them when they hear it happened to someone else (expecting the same experience that someone else had).

Previous researches on this topic pointed out certain factors that affect herding behavior like informational inefficiencies, noise traders, market sentiments, high trade volume, emotional and social influence, economic environment, flexible prices, decision of predecessor, high incentive cost, event uncertainty and financial literacy etc. This research will focus on two main factors i.e. "Financial literacy" and "Event Uncertainty" that are affecting the herding decisions in positive or negative way. According to Nye, Pete, and Cinnamon (2013), "Financial literacy is a measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate short term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions." Financial literacy refers to the skills that investors should have while making decisions on the basis of mathematical, factual, and economic factors such as annual reports, market analysis, and the prevailing mood of investors rather than taking decisions irrationally based on others' behaviors. From a broader perspective, investors having financial skills are more competent in managing their finances effectively that ultimately create a more competitive and efficient market. A low level of financial literacy may lead to a poor financial decision. Calvet, Laurent, John, & Paolo (2009) found that poor financial sophistication is associated with common investment mistakes, such as under-diversification, portfolio inertia and the tendency to sell winning stocks and hold losing stocks.

In addition to financial literacy, the addition of a new dimension i.e. Event Uncertainty is analogous in this study to enriching the outcomes of the relationship between herding behavior and investment decisions. According to Tversky and Kahneman (1974) a decision about uncertain events mostly depends upon individual liking or disliking, and investor decision is affected by so many biases. Investors act irrationally while investing in stock exchange (Elton, Gruber, & Busse, 2004). In unstable markets like Pakistan, the level of uncertainty is very high. Avery and Zemsky (1998) found that herding does occur if there is "Event uncertainty" in the market, that is, uncertainty on whether an information event (i.e., a shock to the asset value, on which informed traders receive a signal) has occurred. Hence, event uncertainty is a normal way to create herding in an economy.

There are a number of studies available to examine herding behavior and its impact on the investment decisions. But the majority of literature is available on impact of herding on investment decisions in context of financial markets especially targeting the stock markets of the developed economies that are relatively stable as compared to the markets of developing economies. The material on impact of behavioral biases on investment decisions in financial markets of Asian countries, where markets are relatively volatile is limited. This study is conducted in order to investigate whether investors in Pakistan are biased emotionally or cognitively while making their investment decisions. Furthermore, the study aims to analyze whether investors of Pakistan are rational or irrational toward investment decisions. This study intends to provide a tool for identifying the impact of behavioral bias i.e. "Herding behavior" on the investment decisions of investors more precisely in the stock market. The study will also observe the role of "financial literacy" and "event uncertainty" in reinforcing herding behavior. This research article contributes to the literature encapsulating behavioral concepts of finance in the stock market. Keeping in view, the volatile financial markets of Pakistan, the findings of this study will be fruitful in educating stock exchange investors to beat the cognitive traps while making decisions and suggest them ways to be rational in their behavior.

Literature Review

Investment Decisions:

Behavioral Finance is a field in which investors are involved in ignoring or deleting the base level assumptions of traditional finance of expected utility maximization phenomenon where investors react rationally in markets which are efficient in nature (Ritter, 2002). Kahneman and Tversky (1973) found that investors systematically violate Bayes rule and other maxims of probability theory in predicting uncertain outcomes. The study of Thaler (1994) documented that there are two types of investors 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. Much of the basic theories of behavioral finance are concerned with a series of new concepts under the general heading of 'bounded rationality,' a term associated with Herbert Simon (1947, 1983). The term bounded rationality relates to cognitive limitations on decision making. As a result, human behavior is made on the basis of simplified procedures or heuristics (Tversky & Kahneman, 1974).

Herding Behavior& Investment Decisions:

Both market participants and financial economists reportedly still believe that imitative behavior is widespread in financial markets (Devenow & Welch, 1996). When individual forecasters know that their ability is judged by comparing their forecasts to the aggregated forecasts of others, herding can become a dominant strategy for every. Herding Behavior in the Stock Market of Pakistan is forecaster in the market (Scharfstein & Stein, 1990). This has led some researchers to assert that market participants

engage in non rational herding behavior (Alan & Kirman, 1993; Shleifer & Summers, 1990). Herding may occur among both irrational and rational investors (Chandani & Sharma, 2000; Devenow & Welch, 1996; Leifer & Teoh, 2003). Additionally, De Long, Shleifer, Summers, & Waldmann, (1990) suggested that rational players can anticipate the presence of feedback trading among irrational investors. Banerjee (1992) and Chandani et al. (1992) presented models in which rational decision makers act in risky circumstances, apply the Bayes' rule correctly, and make decisions based on their own information and information signals deduced from the behaviors of others.

A majority of the investors value the immense flattering prognosis of analysts and the interpretations of professional market players, as the investors have a rational belief that these analysts and professionals have very accurate information that might be wrong. For example, Trueman (1994) argued that financial analysts, acting rationally in their own opinion, may aspire to publish forecasts and recommendations concurring with other analysts' predictions. Hence, the rational professionals may also tend to engage in irrational mania like herding. Their actions may be based on premises related to the fear of loss of reputation as the result of making claims that contradict the general market consensus (Scharfstein & Stein, 1990). Investors comprehend it really troublesome in differentiating between a market composed of well-informed traders and one with poorly informed traders who are herding. This preponderance of activity on one side of the market creates asset mispricing that permits herd behavior and push prices to extremely unsustainable levels leading to bubbles and bursts. It is evident from the literature that herding behavior affects the investors' decisions in making investment.

H1: *Herding Behavior has a significant direct relationship with Investment Decisions.*

Event Uncertainty & Investment Decisions:

Major factors contributing to herding behavior are market inefficiencies, such as weak market regulations, frequent government and central bank intervention, less-educated investors and lower requirements regarding listed companies' information disclosure. These inefficiencies play the role of a catalyst in creating uncertainty in the markets of developing country that induce the investors to make incorrect decisions. The loss as a result of inaccurate forecast reduces the ability of the investor to evaluate rationally and ultimately the investor indulges in replicating the decisions of others. In addition to this, factor to event uncertainty. Herding is also defined as socially inefficient reliance on public information (Vives, 1997). The lesser the quantity and accuracy of the information available to the market players, the higher their propensity will be to disregard private signals and to indulge in copycat behaviors of other players.

Lee (1998) presented a model in which large quantities of cumulated private information, previously blocked as the result of a cascade, could suddenly appear in the market as a reaction to a relatively insignificant event, creating an unexpected information avalanche and leading to sudden price changes. Although, this model was developed a long time ago, it is a well demonstration of sudden market breakdown during the financial meltdown in 2008. In the light of the literature, this study seeks to determine the relationship of event uncertainty and investment decisions in the stock market, as the market of Pakistan is characterized as highly inefficient, with low standards of information disclosure.

H2: *Event Uncertainty has a significant positive association with Investment Decisions in the Stock Market.*

Financial Literacy & Investment Decisions:

Financial literacy has been discussed by many researchers from different aspects. A growing literature has established a strong relationship between financial literacy and investment behavior. Bondt,

Muradoglu, Shefrin, and Staikouras, (2008), for example, shows that households with higher levels of financial literacy are more likely to plan for retirement, invest in securities and that planners arrive at retirement with substantially more assets than non-planners. Similarly, Lusardi and Mitchell (2007) found that those who display low financial literacy are less likely to plan for retirement and as a result accumulate much less wealth. Different researchers have done research to investigate the level of financial literacy of investment decision makers. Monticone and Chiara (2010) found that in order to succeed at the stock market, investors engaged in online trading should be more knowledgeable and informed as compared to other investors, because they lack information about what is happening inside the stock market and they may also become the victims of information asymmetry. This study is carried out to conclude the role of financial literacy while making investment decisions in the stock market of Pakistan.

H 3: *Financial Literacy has a significant positive association with Investment Decisions in the Stock Market.*

Moderating Role of Financial Literacy between Herding Behavior Bias & Investment Decisions:

Rooij, Lusardi and Alessie (2007, 2011) documented that financial literacy assists individuals in making investment decisions and helps them to make unbiased decisions. Lusard and Mitchell (2007) also documented that financial literacy positively affects the investment decisions which are made by investors in stock market. Presented literature proved that financial literacy affects the relationship between cognitive biases and investment decisions. Keeping in view the findings of past researches, this study is aimed at finding out the effects of financial literacy on herding behavior and investment decisions addressing the stock market in Pakistan.

H 4: *Financial Literacy has a moderating effect on the relationship between herding behavior and Investment Decisions, so that it weakens the relationship.*

The Moderating Role of Event Uncertainty between Herding Behavior Bias & Investment Decisions:

It is evident from the recent global crises that extreme herding behavior was observed in the financial market due to high level of uncertainty that leads to misalignment of prices as compared to normal market prices. Social psychologists believe that people have a need to follow others in order to feel assured in their decision-making when they encounter uncertainty, ambiguous information and disagreements (Vaughan & Hogg, 2005). The literature presented that when markets are volatile either due to economic and political instability or due to informational inefficiencies in the market, the investors prefer to be irrational and follow those who are well informed in their opinion. Christie and Huang (1995) say that regarding irrational perspective of herding behavior, believe that investors are more likely to herd during market stress. Consequently, during the period of high level instability, investors are inclined to imitate crowd-wisdom instead of trusting their own abilities. The financial markets of Pakistan are highly uncertain because of instable economy, that induce me to explore how event uncertainty effects the relationship between herding behavior and investment decisions in stock market of Pakistan.

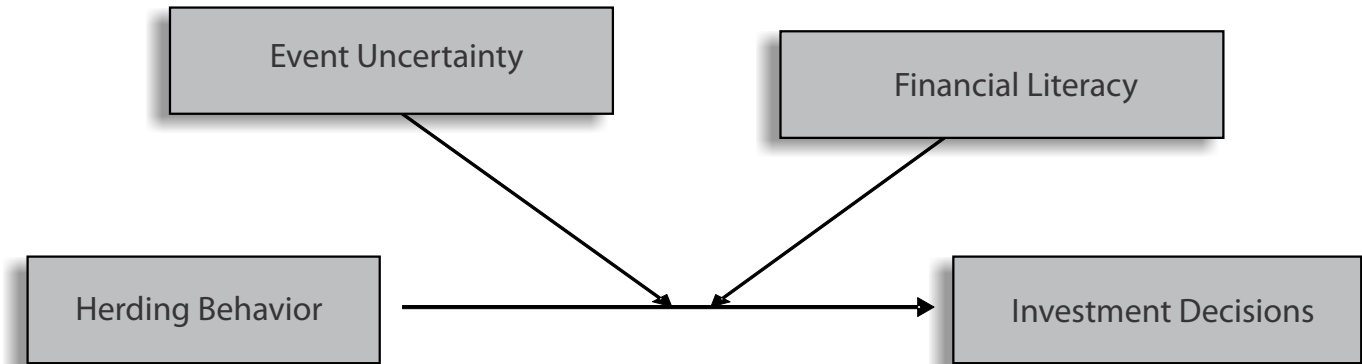
H 5: *Event uncertainty has a moderating effect on the relationship between herding behavior and Investment Decisions, so that it strengthens the relationship.*

Theoretical Framework

In this study, one key variable "Herding Behavior" has been identified as having an impact on the

dependent variable i.e. "Investment decisions pertaining to *Stock Market*". In addition, two variables "*Financial Literacy*" and "*Event Uncertainty*" will also be focused upon to study their effects on relationship of herding behavior and decisions regarding investment. From a literature review of several studies, it is evident that these two variables act as a catalyst in developing a relationship between herding behavior and investment decisions. Theoretically, this personality trait of herding has a major influence on the investors' decisions, if financial literacy of investors is low and markets are highly uncertain.

Figure 1: Model of the study



Independent variable (IV): Herding Behavior, Moderators (M): Financial Literacy and Event Uncertainty, Dependent variable (DV): Investment Decisions. On the bases of this research framework, following hypotheses are generated:

Research Methodology

Population, Sample and Data Collection Procedure:

To observe herding behavior in the stock markets of Pakistan, it was decided to data from Islamabad Stock Exchange and several brokerage houses in Islamabad. The data for this research was collected through a questionnaire. A cover letter explained the purpose of the study to the respondents, assured them of the strictest confidentiality and anonymity of the responses, and mentioned that participation was voluntary. Respondents completed the questionnaire that contained items related to investment decisions, herding behavior, financial literacy and event uncertainty. In addition, each respondent reported age, gender, occupational level, qualification, and work experience in the demographics part of the survey.

A total of 200 questionnaires were distributed, out of which 177 questionnaires were received back after proper filling. There were a total of eight demographics used for this study indicating gender, age, qualification, income, investment portfolio, experience in stock investment and membership with any financial body.

Table 1: Gender of Respondents (N=177)

Gender	Frequency	Percent
Male	169	95.5 %
Female	08	4.5 %
Total	177	100

This table is depicting the total sample size and its distribution on the basis of gender and their percentage value. The table represents the total sample size of this research work (N=177) which is calculated through a statistical package for social sciences (SPSS). Out of the total sample size (N=177), the proportion of males is 169 while there are only 8 female respondents. According to the percentage value, out of 100% respondents 95.5% are male and the remaining 4.5% are female. The majority of respondents (95.5%) were male with an average age of 39 years.

Table 2: Qualification Level of Respondents (N=177)

Qualification	Frequency	Percent
Matric	9	5.1
Bachelors	54	30.5
Masters	72	40.7
MS/M.Phil	31	17.5
PhD	11	6.2
Total	177	100

As per table to information 72 people (40.7%) were having master degrees while the second largest portion belongs to the participants holding bachelor level education which is 54 (30.5%). The number of participant's holding an MS/M.Phil degree is 31 (17.5%). 11 (6.2%) investors were PhDs and only 9 (5.1%) participants were with only matriculation education.

Table 3: Income Level of Respondents (N=177)

Income	Frequency	Percent
Below 5 lac	49	27.7
6 lac to 10 lac	73	41.2
11 lac to 15 lac	43	24.3
16 lac to 20 lac	09	5.1
21 lac & above	03	1.7
Total	177	100

Table 3 shows that the earning of 41.2% investors is between Rs. 6 to 10 lacs, while 27.7% participant's earning are less than 5 lacs. The third category of participant's earning was 11 to 15 lacs which 24.3% of the total sample size.

Table 4: Stock Experience of respondents (N=177)

Portfolio	Frequency	Percent
Less than 5 years	54	30.5
6years to 13 years	72	40.7
14 years to 21 years	35	19.8
22 years to 29 years	14	7.9
30 years & above	02	1.1
Total	177	100

The above mentioned table represents the number of years of experience that the participants have in the stock market. The majority of participants (72) have an experience of 6 to 13 years which is 40.7% of total sample size and the second largest proportion of investors (54) possess experience of less than 5 years which is 30.5%. The third highest category of experienced participants lies between 14 years to 21 years which is 19.8%. The majority of investors (90.4%) prefer to invest in shares while 28.2% choose to invest in real estate. Investors were also questioned about having any membership with any professional financial body (80.8%) of investors did not have any membership. A 5-point Likert scale was used to assess the outcomes with anchors of 1= Not at all, 2=Small Extent, 3=Moderate Extent, 4=Great Extent and 5 = Very Great Extent. Collected data was finalized through correlation and linear regression on SPSS.

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Instrumentation:

The following instruments were adopted and used in this research:

Herding Behavior Bias

The scale used to measure the herding behavior bias was adopted from Saxena, S. (2015). The scale consists of 18 items including "I find it easy to imitate the behavior of other people?" as used to measure this construct. Cronbach's Alpha reliability of this scale was found to be 0.784 and acceptable for a number of 18 items.

Investment Decision

The scale for investment decision was adopted from Saxena, S. (2015). The scale consists of 9 items included "How often did your investment decisions proved to be right?" Four questions were not taken

into account because they are disturbing the reliability of the dependent variable. Cronbach's Alpha reliability of this scale was found to be 0.623 and accepted for 5 items.

Financial Literacy

To measure the construct of financial literacy, the scale was adopted from Vasudevan (2015). The scale consists of 9 items including "I know the meaning of technical analysis and fundamental analysis". Cronbach's Alpha reliability coefficient of this scale was found to be 0.736 and acceptable for a number of 9 items.

Event Uncertainty

To measure financial literacy, the scale was adopted from Vasudevan (2015). The scale consists of 11 items including "Price fluctuation in Pakistan stock market is high". Cronbach's Alpha reliability coefficient of this variable was found to be 0.711 and acceptable for 11 items.

Table 5: Summary of the Measurement Reliability (Cronbach's Alpha)

Measurement Scale	Number of questionnaires	Number of Items	Cronbach's Alpha
Investment Decisions	177	5	0.623
Herding Behavior	177	18	0.784
Financial Literacy	177	9	0.736
Event Uncertainty	177	11	0.711

Results

Correlation Analysis

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

Table 6: Descriptive, Correlations, and Reliabilities

	Mean	SD	1	2	3	4
1. Avg_ID	2.67	0.49	1			
2. Avg_HB	3.03	0.49	.30**	1		
3. Avg_FL	3.20	0.52	.16*	.17*	1	
4. Avg_EU	2.90	0.52	.37**	.57**	.22**	1

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

N=177: Control variables= Age, Gender: ID=Investment Decision, HB = Herding Behavior, FL=Financial Literacy, EU = Event Uncertainty

Table 6 indicates the correlation between herding behavior, investment decisions, financial literacy and event uncertainty. Correlation analysis shows that there is highly significant and strongly positive association between herding behavior and investment decisions with the values of ($r = .303^{**}$, $p = .000$). A significant and positive correlation was also found between financial literacy and investment decisions with the values of ($r = .164^*$, $p = .030$) which shows that the investors who have financial literacy are most likely to make viable decisions. Furthermore, the values of ($r = .368^{**}$, $p = .000$) indicates that there is significant association between event uncertainty and investment decisions. It means that event uncertainty greatly affects the investment decisions of the investors. The values of all the variables are indicating that the independent variable has strong positive effects on the dependent variable.

Table 6 also shows that an investment decision has the lowest and financial Literacy has the highest mean. It was also found that "Financial Literacy" and "Event Uncertainty" biases almost have same standard deviation (0.52) while "Investment Decisions" has the lowest standard deviation (0.49). Cronbach's Alpha reliabilities for all variables were also found to be above 0.7 except for the dependent variable i.e. "Investment Decisions" which is .623.

Regression Analysis

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

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Table7: Regression Analysis with Moderation

	β	R	R ²	significance
Step I				
Avg_HB	.130			.000
Avg_FL	.076			.03
Avg_EU	.259	0.393	0.154	.000
Step II				
Avg_HB	.235			
Avg_FL	.028			
Avg_EU	.251			
HBxFL	-.419			.001
HBxEU	.300	.435	.189	.000

N = 177, $p < .001$

Simple linear regression and Hays process version 3.2 were used to analyze the impact of herding behavior bias on investment decisions. Table 2 indicates that in step 1, herding behavior bias has a significant positive impact on investment decisions with the value of $\beta = .130$ and $p = .000$. This may reveal a strong support to the first hypothesis of study. The regression analysis is also supporting H2 of the study because a significant relationship was found between financial literacy and investment decisions. Financial literacy has a significantly positive impact on investment decisions with the value of

$\beta = .076$ and $p < .05$. The results of regression and correlation are also supporting H3 of the study. It means that event uncertainty significantly affects the investment decisions with the value of $\beta = .259$ and $p = .000$. In step 2, there is a minor change in value of coefficient of all three variables i.e. herding behavior, event uncertainty and financial literacy which is due to effects of interaction terms. The interaction term $\beta = -.419$ and $p < .001$ indicates that an increase in financial literacy weakens the relationship between herding behavior and investment decisions by 41.9%. The hypothesis 4 is strongly supported and the negative value of $\beta = -.419$ is a clear indication that financial literacy weakens the relationship between herding behavior and investment decisions because of its negative effects. It was also found that a change in event uncertainty strengthens the relationship between herding behavior and investment decisions by 30%. The positive value of $\beta = .300$ and $p = .000$ indicates that event uncertainty strengthens the relationship between herding behavior and investment decisions which is a good support to H5.

Figure 2: Moderation Analysis graph1

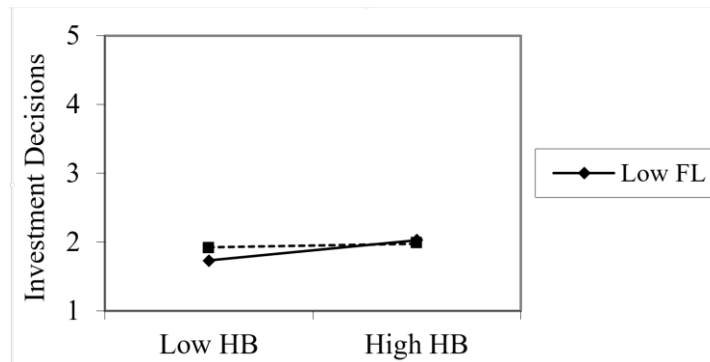
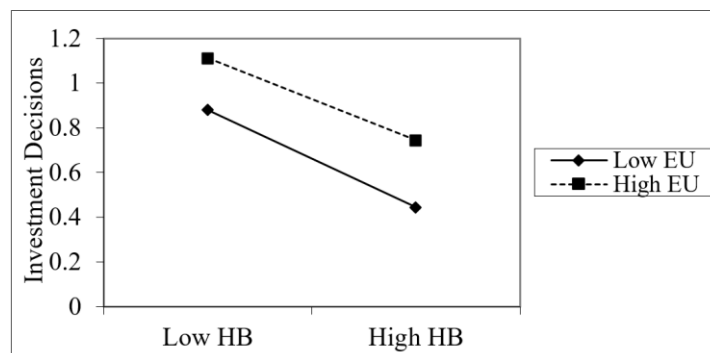


Figure 3: Moderation Analysis graph2



The flattest slope in the graph shows that when the level of financial literacy is high, the relationship between the herding behavior bias and an investment decision will weaken and this lends strong support to H4. The steeper slope in graph shows that when the level of financial literacy is low, the relationship between herding behavior and an investment decision will be stronger. The graph shows that when the level of event uncertainty is high, the relationship between a herding behavior bias and an investment decision will be strong and vice versa.

Discussion

In this part of the article, discussion will be based on the findings of five hypotheses developed to

observe the impact of a herding behavior bias on investment decisions and the moderating role of financial literacy and event uncertainty in context of Pakistan. The First hypothesis of the study was based on the assumption that herding behavior has significant direct relationship with investment decisions and the results of regression and correlation analysis supported this hypothesis. The findings of the study are in alignment with the citation in literature review of Tversky and Kahneman (1974) and Baddeley et al. (2005) in which they argue that investors are biased cognitively with herding behavior while making investment decisions. In addition to this, it was concluded that herding may occur among both irrational and rational investors (Bikhchandani & Sharma, 2000; Devenow & Welch, 1996; Hirshleifer & Teoh, 2003). It can be concluded that the investors make investment decisions on the basis of their past performance and overestimate their skills and abilities. In this study, the percentage of the investors who take investment decisions on the basis of past performance of a stock is 61%.

The second hypothesis of study was investigation of significant positive association between event uncertainty and investment decisions in the Stock Market. This hypothesis was supported during the analysis and a significant positive association was found between event uncertainty and investment decisions. The findings of this study are also supportive of the literature, as according to Tversky and Kahneman (1974), decisions about uncertain events mostly depend upon individual liking or disliking and an investor decision is affected by so many biases. The results of the study are a clear demonstration that event uncertainty, either in the form of political or economic conditions or in the form of inefficiencies in informational cascade, affects the decisions of the investors to a great extent.

Third hypothesis was presumed as financial literacy has a significant positive association with the investment decision in the stock market, which was supported by the results of regression and correlation analysis. The results are depicting that there is a significant positive association between financial literacy and investment decisions. The findings of the study are consistent with the literature as many studies reveal that financial literacy positively affects investment decisions and helps people to earn a maximum return from their investment (Ballantine & Stray, 1998; Lusardi & Mitchell, 2007; Lusardi, Mitchell, & Curto, 2010; Jappeli & Padula, 2013). It means that financial knowledge significantly contributes to investment decisions in the stock market and enables the investors to make unbiased and rational decisions.

Financial literacy moderates the relationship between a herding behavior bias and the investment decisions in the stock market and it weakens the relationship. It was the fourth hypothesis of the study which is also strongly supported by the findings of the regression analysis for moderation. Rooij, Lusardi and Alessie (2007, 2011) documented that financial literacy facilitates the individuals to be unbiased in decision making and to act rationally while making investment decisions. These findings are also consistent with the study of Lusardi and Mitchell (2007) in which they concluded that financial literacy reduced the effects of cognitive biases and positively affected the investment decisions in a way that investors make more rational and unbiased decisions. Hence, the negative value of beta (-0.419) is a clear indication that an increase in financial knowledge helps the investors to take decisions logically after analyzing the market conditions, and conducting company analysis that impedes the investors to get engaged in herding behavior. It is concluded that financial literacy weakens the relationship between herding behavior of investors and investment decisions.

Fifth and last hypothesis of the study was, "event uncertainty moderates the relationship between herding behavior and investment decisions in the stock market, and it strengthens the relationship". The regression and correlation analysis conducted to test this hypothesis generates the results that support this hypothesis and suggest that herding behavior is present in the Pakistan stock market, and is greater

during extreme market conditions. Moreover, this hypothesis is also in align with the literature review of study conducted by Avery and Zemsky (1998) in which they documented that herding does occur if there is "Event uncertainty" in the market, that is, uncertainty on whether an information event has occurred. The positive value of beta shows that event uncertainty strengthens the relationship between the herding behavior and investment decisions pertaining to the investors of Pakistan. It means that whenever there is uncertainty in the financial markets of Pakistan and the information arrives stochastically, the investors ignore the financial analysis and market trends, and mimic the decisions of others, or rely on their investment history for their investment strategies. Briefly, a complex information structure can promote herding behavior among investors.

Limitations

The study being focused on one region, the capital city Islamabad would not be able to gauge the mind-set of the entire country towards the study and its influence. Another limiting factor was that the sample of respondents was limited to a small number due to time constraints. This research comprises of studying the impact of only one bias i.e. herding behavior in stock market while there are a number of behavioral biases that induce the investors to act irrationally while making investing in stock markets, such biases need to be investigated. In addition to this, there are multiple dimensions of uncertainty while this study can address only two of them due to time constraints.

Directions for Future Research

This article provides an insight in the phenomena of herding behavior with moderating role of event uncertainty and financial literacy but many questions in the study remain unaddressed inexorably. Future research can be conducted with large sample size and data can be collected from other regions of the country 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 biases and variables to be compared with the findings of this study. The study was limited to stock market investors and it would thus recommended to further study the herding behavior in the other financial and non financial markets of Pakistan.

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