p-ISSN-2415-5284 | e-ISSN-2522-3291

(65-80)

Volume 8 | No. 1| 2022
SALU-Commerce & Economics Review
https://.cer.salu.edu.pk

Influence of Heuristics on Investor Behavior: A case of Pakistan Stock Exchange Karachi

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Abstract

This study is an analysis of the investment behavior of investors of the stock market to enquire whether there is any impact of four independent variables namely herds behavior, overconfidence, disposition effect, cultural bias on dependent variable investment behavior. Since models of conventional finance are based on the assumption of rationality, the present study will dig out biases in these models. Behavioral finance researchers attempt to define that human beings do not behave as rationally as economists assume and their decisions are influenced by their psychological feelings. The present study attempts to examine the most referred heuristics identified as per literature reviews, such as herd behavior, overconfidence, disposition effect, and cultural bias investing in Pakistan Stock Exchange. The study used an adapted questionnaire to collect and analyze the primary data from 306 investors of Pakistan stock exchange in Karachi. The response rate was 85.6 percent. Statistical techniques like descriptive statistics, regression analysis, and correlation analysis are employed. The findings of the present study revealed a significant relationship between the herding effect and cultural bias with investor investment decision making. The study did not find any evidence of a relationship between overconfidence, disposition effect, and investment decision. It can be said that most investors in Pakistan are not making rational decisions based on accounting information and most of the time their decisions are influenced by the decisions of other investors. Moreover, investors are highly influenced by cultural biases. It is suggested that concerned authorities should focus on this issue because stock markets can be easily manipulated if investors rely on other's recommendations and get influenced by cultural bias while making investment decisions.

Keywords *– Behavioral Finance, Heuristics, Herd Behavior, Pakistan Stock Exchange, Overconfidence, Disposition Effect, Cultural bias.*

1. Introduction

The word "investment" refers to the allocation of cash or postponement of consumption in anticipation of some benefits or returns in the future. It is quite interesting for many individuals to invest since involvement in decision making is possible through investment. Investment is considered as a primary instrument for the growth and development of any country. Investment is the flow of capital and it results in higher capital and creating a robust economy. Investors are considered the backbone of the capital market. A developing economy, like Pakistan, needs a growing amount of savings. The investment, being the important instrument of economic process and development of the economy, is greatly emphasized. An economy with a high level of consumption and fewer investments is an unbalanced economy. For a progressive economy, a rustic must have committed. The securities market is understood as the handiest channel for the company's capital raise (Zuravicky, 2004). People have a great interest in stocks due to the long-term growth of capital, dividends, and a hedge against the inflationary erosion of buying power(Teweles& Bradley, 1998). Investors select portfolio on their past stock experience and data or information provided by other investors as asserted by (Shefrin, 2010). Large numbers of investment opportunities are available across the world and mostly investors match their risk profile with associated risk while selecting an investment avenue before investing. Many investors want to make investments in a way that they get enormous returns as early as possible without the risk of loss of principal invested money. Due to this very reason, many investors are always searching for top investment avenues.

The traditional Theory of Finance assumes that Investment Markets and their Members are rational in investment decisions with aim of profit maximization. The traditional theory of Finance revolves around the Efficient Markets Hypothesis (EMH) that assumes that all of the information is provided to all investors without any cost. Therefore, the price of stocks always reflects their intrinsic value and is reasonable" (Fama, 1965, 1970, 1991). However, Investors do not make rational investment decision practically and other factors influence their investment decision (Thaler & Ganser, 2015). Thus, investors' irrationality may be the result of several factors that not only impact the market but also drives the price of the stock from its original price. This concept of investor behavior, known as "behavioral finance" has been studied last few decades which has made notable progress in the last two decades.

Kengatharan & Kengatharan(2014) in their study argue that psychological factors play a vital role in behavioral finance theory. According to them, behavioral finance studies psychological behavior like emotion and panic, which can impact the behavior of investors. Therefore, psychology and anthropology together will help in explaining irrational investor behavior. Behavioral finance defines that individual investors don't always behave in their own best interests. (Mitroi, 2016) also argues that anomalies in prices may be studied through behavioral finance. Behavioral finance explains that why many investors are concerned about investment of stocks and property but decisions are not supported a market study that involves mentality (Abraham, 2000) contended that the significance of finance in the prediction of behavior is essentially analyzed and discussed by many researchers but it is not due to that specific reason that it must be. (Bakar & Yi, 2016) revealed that heuristics have a significant influence on investors' decisions in the stock market. A study of (Baker & Nofsinger, 2010) found that

"cognitive errors", "fundamental heuristics" and "psychological biases" influence the process of decision.

A psychological shortcut or mental ability that enables an individual to make a choice, pass judgment, or solve an issue immediately and using the least of mental effort. Humans process large amounts of data and make many choices within a limited amount of time and resources. Specifically in a situation, when information is missing, or a right away action is critical, heuristics act as "rules of thumb" that guide behavior down the foremost efficient pathway. Heuristics establishes relationships and influences on the choice-making of investors in their stock markets. In this backdrop, this study attempts to look at the impact of heuristics on investors' deciding within the Pakistan securities market.

In Pakistan, stock investors invest in the short term due to the prevailing political situation. The economic condition of the country and local investment culture has been the critical factors leading to this trend. Investors in Pakistan do not consider it safe to invest money in long-term investment avenues so they would rather explore other investment options. Investors are financially literate to utilize their savings in profitable ventures so they have less faith in stock exchange given its volatility. It is also pertinent to mention that the stock market in Pakistan is in the developing stage. The market does not have a streamlined information structure or data delivery system which makes it harder for investors to obtain accurate and reliable information about stock trading trends.

2. Literature Review

Behavioral Finance tries to explain behavioral and emotional factors by combining conventional finance and economic concepts and argue why irrational choices are made by investors. The field of Behavioral Finance assumes that the structure of information and characteristics of market investors impacts market efficiency and regulates the actions of investors in the investing process. Theories of standard finance mostly argue that all investors collect data that is available all around and opt for the best earning option. However, imperfect knowledge about market and stocks coupled with uncertainty about outcomes of choices creates a problem for investors. This leads to an uncertain investment environment. The people usually act irrationally. Let's take a simple example of a lottery ticket, many people purchase lottery instruments in hope of earning quick profits on that tickets but in reality, they make decisions using heuristics factors (Shanmugsundaram & Balakrishnan, 2011; Tversky & Kahneman, 1974). (Shafi, 2014) categorized the biases that affect the behavior of investors in four categories namely psychological, demographic, social, and economic. In this study, our focus is on some Psychological factors include overconfidence, disposition effect, herd behavior, cultural bias.

2.1 Herd Behavior

In a particular situation when people start behaving like others instead of taking independent decisions by considering the available information, this behavior is called Herd behavior. Herd behavior is more commonly found in individuals who possess insufficient knowledge about stock performance and its market. Investors do not analyze stock trading trends and make decisions on the bases of other investor actions regarding

the stock investment that ultimately influences the investor risk and return characteristics (Banerjee, 1992; Bikhchandani et al., 1992; Lin, 2011).

2.2 Overconfidence

Overconfidence is an act to exaggerate the understanding of their information, knowledge, skills, and abilities. Moore et al., (2007) define overconfidence as is an estimation of individuals' actual knowledge and his/her performance based on that knowledge base that is over propagated and perceived, contrary to the actual base. Steven Pressman, an economist, argues that Overconfidence is a vital factor that results in investment scams around the world. Overconfidence impacts the rational decision-making (Odean, 1999; Statman et al., Barber &Odean, 2001; 2006; Weber & Camerer, 1998; Moore & Healy, 2008).

2.3 Disposition

HershShefrin and Meir Statman, economists, given this term for the first time in their study of the year 1985. Investors with this effect in mind are always inclined to sell those stocks that are losing in terms of money and sell those that are earning higher yields. Disposition may also be called Mental accounting, Regret avoidance, and Prospect Theory. (Shefrin & Statman, 1985; Stewart & Shefrin, 2000) (Odean, 1998) researched nearly ten thousand brokerage houses in their study and found out that individuals hold losing stocks for an average of 124 days. Stocks that are earning or whose prices have increased are kept for 104 days on average.

2.4 Cultural Bias

Cultural bias is a leaning to understand a word or act according to meaning prevalent in that specific culture or meaning assigned to it. This bias has been derived from cultural variation. The bias can lead to more constructive or less favorable judgments than warranted. The behavior of investors continues to differ around global markets. Culture may drive investment behavior significantly even other variables such as inflation rate and amassed wealth are taken into account. In addition to the above-mentioned factors, different studies have identified that market factors (e.g., over-reaction, customer preference to price changes) also affect the investment decision. (Sultana & Pardhasaradhi, the study of 2010) establishes that the buying decision of equity investors is dependent upon brand perception, social responsibility aspect of a firm, risk minimization, government policies, and expected profit. (Hon-Snir et al., 2012) their findings state that all categories of individuals whether professionally qualified or otherwise get affected by all behavioral factors. These include gambler fallacy, herding effect, hot hand fallacy effect, and disposition, etc. However, more experience lowers the impact of these factors on decisions. (Islam, 2012) identified chief influential factors on investment while studying the investment behavior of investors in the stock exchange of Dhaka. The factor analysis proved that psychological elements pose a dominating impact on the buying decisions of investors in exchange.

The study presented by (Rekik & Boujelbene, 2013) concludes that Investors in the Tunisian market don't make wise investment decisions and irrationality prevails in their decisions. The study further elaborated and enlisted five factors that impact the decision of Tunisian Investors. These include: representativeness bias, herding bias, mental accounting, anchoring, and loss aversion. The study also concluded that Overconfidence does not impact Tunisian investors during the process of investment. Findings show that investors are hesitant, not enough confident, unwilling to take risks, and imitate other's

directions or opinions in their decisions. Moreover, the interaction between demographic factors and financial factors is strong. The study further concludes that demographic factors such as age, experience in investment, social and professional knowledge, and gender all have bearings on buying decisions of investors in the Tunisian market. Hence, it is found that elder investor is not as affected by psychological factors as younger investors which are influenced by such elements.

Al-Tamimi (2006) in study studies the factors bearing on investors in the United Arab Emirates. He identified 6 most important factors that impact the behavior of investors. These factors are: Get rich quick, past reputation and performance of securities, earnings of corporations, holding by Government, stock marketability, and formation of standardized financial markets. These markets are referred to as Abu Dhabi Securities Markets and Dubai Financial Markets. The research states that the five least influential factors are: Expected losses in global financial markets, the opinion of a family member or relative, losses that are expected in other national investments, and gut feelings of the economy and minimizing risks. Whereas the factors; self-image and firm image coincidence, information about company accounting, advocate recommendations, personal financial needs, and neutral information are described as the most influential factors shaping investor's behavior. Family member recommendations and religious factors are the two least influential factors.

In the study of Volpe et al., (2002) states that investors with online knowledge should be having more knowledge than the individuals lacking virtual knowhow. The results of a national survey conducted in Australia on adult financial literacy by (Nielsen–Anz, 2005) indicate that individuals with lower educational qualifications, lower earned income and unmarried investors are not much associated with financial literacy. (H. Al-Tamimi, 2009) in his study conducted in UAE examined the literacy rate of UAE investors at the individual level and found that the literacy rate is not even near to the desired benchmark. The study stated the religious factors, ethics of the firm, the reputation of the company, and diversification purpose as most influential factors whereas the factors of Family opinion, rumors, the degree of ease in obtaining loans, and friend recommendations are considered as the least influential factors.

Cooray, (2003) identified that risk factor, Return on investment (ROI), inflation, a consequence of investment tax, and investment liquidity as influential factors in the stock market of Sri Lanka. The study conducted by (Hossain & Nasrin, 2012) in Bangladesh founded eight most influencing factors that impact the investment decision of investors. These factors are the value of net assets of a specific company, Publicity, reputation/attributes of a company, Opportunity of trading, Structure of Ownership, Personal financial needs, the influence of other people, and accounting information. (Shah et al., 2018) in his research revealed that due to the heuristics factors and effects of framing, the value of stock deviates from its fair price and this causes an inefficient market. (Birau, 2011) further states that bringing improvement in the market is not possible for a longer period. (Azam & Kumar, 2011) conducted the study in Karachi Stock Exchange to determine the influencing factors on investors in Pakistan. He found that three factors i.e. gross domestic product (GDP) growth rate, earning per share and foreign direct investment (FDI) bears a significant impact on the prices of stocks.

Tabassum Sultana & Pardhasaradhi, (2012) study is considered crucial for every investor to make an investment decision, particularly when investing in equities is made

as it involves higher risk and returns are also not certain for these equities. 40 most important attributes have been identified while choosing any stock to invest in, which influence an investor's buying decision. Order of influence concerning all characteristics was first identified and then ranking was done based on the most frequent and highly rated by inventors. Factor analysis was employed and the tool identified the factors that have bearings on the behavior of Individual equity investors in India. Using this statistical tool, 10 attributes were found most influential among the total 40 factors. These attributes are "Wealth maximization, Individual eccentric, brand Perception, social responsibility, Accounting information, Risk minimization, Government & media, Financial Expectation, Economic Expectation, and Government & Media and advocate recommendation.

Kabra et al., (2010) in his study observed influential factors on the investment decision process and revealed that two factors i.e. gender and age are the chief factors that set the risk-bearing capacity of individuals in their investments and determine the amount of risk they can take. He further says that a contemporary investor is a sufficiently groomed and mature person. Despite extraordinary growth in the stock market and level of quality of Public Offerings (IPOs) in the securities market, investors tend to make investments as per their risk-taking capacity and preference. For example, risk-averse people, take life insurance policies, banks fixed deposits, and deposits with the post office, public provident fund, and national saving certificates. Investors do not investment blindly and always use all available information, sources, and references before making investment options. Still, they fell victim to emotional and mental overestimation such as overconfidence. They tend to be narrowly framed. Investors utilize all sources to consider all sources before making any investment decisions.

2.5 Research Hypothesis

The present study tests the following Hypothesis:

H1: The behavioral factor, "Herd behavior" influences the investors in making a stock purchase decision in the Karachi stock market.

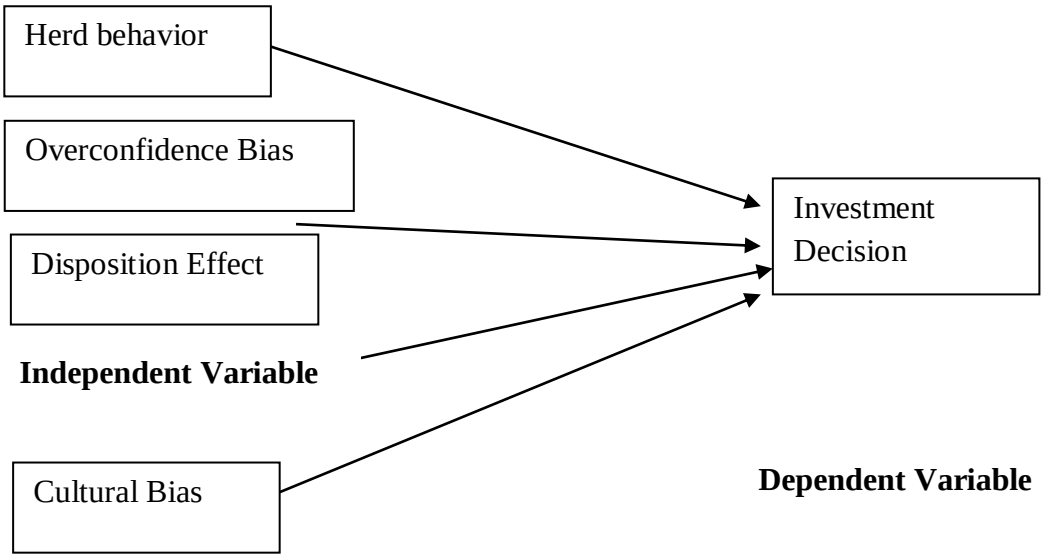
H2: The behavioral factor, "Overconfidence bias" influences the investors in making a stock purchase decision in the Karachi stock market.

H3: The behavioral factor, "Disposition Effect" influences the investors in making a stock purchase decision in the Karachi stock market.

H4: The behavioral factor, "Cultural bias" influences the investors in making a stock purchase decision in the Karachi stock market.

2.6 Conceptual Framework

Based on the heuristics discussed earlier above, the conceptual framework is formulated below. The discussion of this study is anchored on this conceptual framework.



3. Research Methodology

Research methodology refers to a technique by which new knowledge about a subject under investigation is studied. The methodology is a problem-solving technique for the subject under consideration. Everything that assists in achieving a goal or fulfilling objective is part of a methodology (Holme & Solvang, 1996). In this chapter, the methodology used for the present study is discussed and a detailed overview of the research instrument is described. This chapter also discusses the development of survey questions, sources of data collection, and various statistical techniques used to analyze the data. The quantitative approach was employed in this study and the positivist method was used to analyze the collected data. An explanatory type of research was applied to investigate the effect of most referred heuristics factors in the investment process of investors investing in the stock market. As per the statement of Cooper & Schindler (2014), explanatory study specifies causal links among variables that connect to the research problem. Additionally, the Cross-sectional time dimension was applied to gather research data through an adopted questionnaire concerning one point at one time during this research and employed a comparatively inert approach to make general interpretations based on results generated. Being a core element of the study, the modified Questionnaire was distributed to 375 individuals who invest in the securities market in Karachi.321 questionnaires were received back from individuals but 306 questionnaires were filled by respondents participating in the research. The response rate of investors in the Karachi stock market stands at 85.6 percent. Data of 306 respondents were entered into SPSS version 23 and subsequently analyzed for making conclusions.

All active investors including brokers in all three Pakistan stock markets are considered as the total population for this study. It is very challenging to survey the entire population (Sproull, 2002). The target population, in current research, as investors and brokers in the stock exchange of Pakistan in Karachi. The sample which is representing was chosen on the bases of convenience sampling due to resources and time constraints. For any study, the recommended size of the sample is between 30 to 500 which is well thought-out as appropriate for the attainment of good statistical examination (Sekaran,

2003). The sample is chosen based on the convenience and availability of respondents. It is most commonly used in organizations and businesses (Acharya et al., 2013). This sampling design can be used in both qualitative and quantitative studies (Etikan et al., 2016).

Due to time constraints for the development of new questionnaires and testing it for validity and reliability, the previously tested questionnaire was adapted in this study through rewording of items (questions) or the addition of new statements specific to the new study (Meadows, 2003). Closed questions in the questionnaire were used and asked from the target population. Five-point Likert scale was used for all items of the questionnaire which ranges from number 1 that refers to "strongly disagree" to the number 5 which refers to "strongly agree". Data preparation was done before processing responses of collected data for further analysis. Collected data through questionnaires were analyzed by utilizing descriptive statistics, correlation, and regression analyses. For this study, dimensions of project success were considered as dependent variables i.e. Investment Decision and herd behavior, overconfidence, disposition effect, cultural bias were tested as independent variables.

4. Research findings/Results

4.1 Pilot testing

To check the reliability of items included in the research instrument, pilot testing was carried out. 35 questionnaires were given to stock investors, 28 questionnaires were returned back and only 20 were completely and appropriately filled by respondents. This accounts for 80 percent of the response given by investors.

4.2 Demographic Variables

Table-1 shows the composition of the research sample that includes males that constitute 87.6% and on another side, 12.4% were female in the Stock exchange in Karachi that is part of the research sample. Very few women invest in PSX and Due to the cultural and social norms of Pakistan; concern of gender bias has been ignored in this research. In the research sample, 87.6 percent of participants are employed, 8.2 percent are unemployed and 4 percent are self-employed.

Table-1 Demographics Summary

Title	Category	Frequency	Percentage
Gender	Male	268	87.6
	Female	38	12.4
Employment	Employed	268	87.6
	Unemployed	25	8.2
	Self Employed	13	4.2
Age	18-25	18	5.9
	26-33	162	52.9
	34-41	85	27.8
	42-49	29	9.5
	50 and Above	12	3.9
Qualifications	Matriculation	17	5.6
	Bachelor	53	17.3
	Master/MBBS	126	41.2
	MS/MPhil	90	29.4
	PhD	20	6.5

Experience	Under 1 year	144	47.1
	1-3 years	86	28.1
	3-6years	37	12.1
	6-12years	21	6.9
	Over 12 years	18	5.9
Income	Below -45000	37	12.1
	45001-65000	80	26.1
	65001-85000	58	19.0
	85001-105000	109	35.6
	105001and above	22	7.2

It can be seen from the table that most of the respondents (162 investors stands at 52.9% of the total research sample) are mostly at the ages of 26 to 33), while 27.8% participants are the age of 34-41, 9.5% of the age ranging 42-29 years, 5.9 percent ranges between the age of 18-25 years and respondents older than 50 years are 3.2 % of the total sample. As regards qualification of participants, 5.6% possess matriculation, 17 % possess bachelor's degrees, 41.2 percent earned the degree of Master level qualifications, 29. % are having higher qualifications degree of MS/Mphil and 6.5 percent were Ph.D. qualified. A major portion of respondents is composed of higher education and a degree of University. These education levels of investors have brought about positive results for this study as a large proportion of the total sample constitutes high qualified investors. This level of education will enable them to respond accurately to research objectives and their decision in respect of stock investment will be more mature. Moreover, among participant, 19.3 percent have very less experience in the stock market i.e. even less than a year, 28.1 percent were having 1-3 years stock trading experience in the market, 12.1 percent possessing stock experience of 3-6 years, 6.9% have stock experience between 6-12 years and 5.9 percent having more than six years of stock investment experience in the market. Furthermore, the monthly income of the 12.1 percent is Below –Rs.45000, 26.1.2 % earn between Rs.45001-65000, 19 percent fall in the income bracket of Rs.65001-85000, 35.6 percent earn Rs.85001-105000 and 7.2 % earn more than Rs.105001 in a month.

4.3 Reliability analysis

4.3.1 Cronbach's Alpha:

Cronbach's alpha is used as a statistical tool to check the reliability of test items or scale set and verifies the internal consistency of items used in the questionnaire. Cronbach's alpha tool was developed by Cronbach's in 1951. It is used extensively in research as a prudent index to determine the internal consistency of items (Kerlinger 1986). Nunnally (1978) stresses that value of the coefficient should be greater than 0.6 to be tested as reliable. Table -2 shows that Cronbach's Alpha for all variables is more than 0.7 which indicates that items included are reliable and internally consistent for further empirical analysis.

Table-2 Reliability Statistics

Variable	Items	Cronbach's Alpha
Herding Effect	3	.724
Overconfidence	8	.755
Disposition Effect	4	.800
Cultural Bias	4	.844
Investment Decision	5	.784

4.4 Correlation analysis

Table-3 shows correlation values among the variable studied in this research. The outcome of the investigation is described in coefficient value for five variables of the study. Each variable is perfectly correlated with itself with a correlation coefficient of one (r = 1).The analysis further reveal that herding is positively correlated to overconfidence, disposition effect, cultural bias and investment decision with correlation coefficient of r = .383, r = .771, r = .988 and r = .816 respectively and value of P is less than 0.01 for each variable. This result shows that as the value of herding ascends, quality /status of investment decisions, overconfidence, and disposition effect, cultural bias increases.

Table-3 Correlations

		Herding Effect	Overconfidence	Disposition Effect	Cultural Bias	Investment Decision
Herding Effect	Pearson Correlation	1	.383**	.771**	.988**	.816**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	306	306	306	306	306
Overconfidence	Pearson Correlation	.383**	1	.378**	.352**	.252**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	306	306	306	306	306
Disposition Effect	Pearson Correlation	.771**	.378**	1	.772**	.654**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	306	306	306	306	306
Cultural Bias	Pearson Correlation	.988**	.352**	.772**	1	.836**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	306	306	306	306	306
Investment Decision	Pearson Correlation	.816**	.252**	.654**	.836**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	306	306	306	306	306

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

Further results indicate that Overconfidence also has correlation coefficient of r = .378, r = .352, and r = .252 for disposition effect, cultural bias and investment decision respectively and value of P is less than 0.01 for each variable. This shows that

Overconfidence is positively related to all variables and an increase in Overconfidence will lead to an increase in all these variables. Moreover, the disposition effect has Pearson's correlation coefficient of r = .772 and r = .654 for cultural bias and investment decision and the P-value is less than 0.01 which shows a positive correlation of disposition effect with these variables. Findings, hereby, conclude that all five variables are correlated positively, and an increase in one variable is positively associated with an increase in other variables.

4.5 Regression Analysis

Regression analysis is an important statistical technique and set of processes to estimate the relationships between a dependent variable and one or more than one independent variable. The impact of the independent variable is assessed collectively or individually on the outcome variable by using multiple regression (Bakar & Yi, 2016). In the present research, the impact of heuristics as an independent variable is determined on investment decision making (outcome variable) of investors trading in stocks in the Karachi stock exchange.

From table-4, the value of R Square was founded as .704 which shows that in the case of investment decision making as a dependent variable, the independent variables as herding, overconfidence, disposition effect, and cultural bias can explain it by 70.4 %. It indicates that a 70.4% change in the independent variable is due to the independent variable which is under consideration in this study. The remaining 29.6% is because of other variables that are not considered in this study. According to the literature in the filed the value of R Square in the study of Bakar and Yi, (2016) is 0.696, Aziz and khan, (2015) is 0.221. The value of adjusted R square is .700 which shows the penalization of any addition of irrelevant variables in the model. The standard error of the estimate is 0.44042 which is the root mean of squared error.Table-5shows the results of ANOVA. The overall significance of the research model is determined through ANOVA (VELUMONI, 2017). The table shows the value of regression, residual value, and total value as 138.559, 58.386, and 196.945 respectively. These values show a breakdown of the variance independent variable.

Table-4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839[a]	.704	.700	.44042

a. Predictors: (Constant), Cultural Bias, Overconfidence, Disposition Effect, Herding Effect

Table-5 ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	138.559	4	34.640	178.579	.000[b]
	Residual	58.386	301	.194		
	Total	196.945	305			

a. Dependent Variable: Investment Decision

b. Predictors: (Constant), Cultural Bias, Overconfidence, Disposition Effect, Herding Effect

The mean square value is 34.640 and .194. This value is derived by taking the Sum of Squares which is divided by respective Degree of freedom. F statistics value is statistics is 178.579 which is more than 20 and reflects the fitness of the model. The P-value is also 0.000 which is significant as it is less than 0.05. Therefore, it indicates that there is a significant relationship among variables and the research model is significant for further research analysis.

The undermentioned regression models were adopted from the research carried out by Kengatharan and Kengatharan (2014). Regression Equation is defined as below:

Investor's Decision Making = 1.005+ (-.311 Herding effect)+ (-.045 Overconfidence) +.036 Disposition Effect +1.010 Cultural Bias + e.

The value of the constant is 1.005 in the above equation which shows that if the value of all independent variables is zero, then the dependent variable i.e. investor's decision making will be equal to 1.005. Results in table-4 further reveal the value of beta as 1.005 which means that explanatory variables have 100 times impact on the dependent variable. The beta coefficient value of the Herding effect is -.311. This means that increase in every unit of Herding will result in a .311 unit decrease in investment decision making, assuming all other variables constant. The value of P is 0.096 and less than 0.10 which shows there is a significant negative relationship between Herding and investment decision making. Hence, investors are influenced by the Herding effect, and H1 is supported.

Results show the beta coefficient value of Overconfidence is -.045. P-value is (.275) which is greater than 0.10, hence indicates an insignificant relationship between overconfidence and investment decision making. Investors in Pakistan stock exchange in Karachi are not influenced by overconfidence and H2 of this study is not supported. These results of Overconfidence as an insignificant variable are also consistent with the study conducted by (Aziz & Khan, 2016). Moreover, the value of the beta coefficient of disposition effect is .036 and the value of significance is 0.424 (P-value greater than 0.10) which shows that the independent variable disposition effect does not have a significant influence on the decision making of investors. Hence H3 is also not supported.

The significance value of the last independent variable in this study i.e Cultural Bias is 1.010. P-value is .000 which is less than 0.10 hence shows a significant positive relationship between the independent variable Cultural bias and investment decision making. It indicates that every unit increase in Cultural Bias will result in a 1.010 unit increase independent variable, investment decision making, assuming all variables constant. The value of the beta coefficient of Cultural Bias is 1.010; it means in every unit increase in neutral information, a 1.010 unit increase in investment decision making is predicted, holding other variables constant. P-value (.000) shows the significant relationship between Cultural bias and investment decision making and H4 is supported.

Table-6Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.005	.135		7.465	.000
	Herding Effect	-.311	.186	-.352	-1.669	.096
	Overconfidence	-.045	.041	-.038	-1.093	.275
	Disposition Effect	.036	.045	.040	.801	.424
	Cultural Bias	1.010	.181	1.165	5.567	.000

5. Conclusion/Recommendations

The main purpose of conducting this study was to examine and determine the effect of heuristics factors on stock investment decision-making in the market. After reading the literature on the behavior of investors, the researcher is convinced that research on this topic may be expanded in world stock markets as very little research is conducted on this topic. As regards, Pakistani Stock markets, research on investor's behavior is also scarce and this study will be helpful for stockholders such as investors, investment corporations, and professionals to use this study as a policy guideline.

The empirical findings of this study reveal that there is a negative significant relationship between Herding and investor investment decision making. The results also show a positive significant relationship between Cultural Bias and investor investment decisions. As data shows that the majority of sample respondents possesses very little experience of the stock market, therefore, investors are risk-averse and follow other person investment decision while investing in stocks in stock exchange in Karachi. These results of the study have vital policy implications. Investors must be educated about deciding on an investment. Oftentimes, a decision made by stock investors is based on the opinion or recommendation of family members or friends to invest in any particular stock of any company. Since the majority of investors have less experience and stock market knowledge, so they fell prone to rumors and acts on others' opinions while making their investment decision.

The thesis concluded that Cultural bias has an even more significant impact on an investor's decision than the Herding effect. Given the great attachment to cultural norms and social settings, market participants are greatly affected by cultural biases while making a stock investment decision. The main characteristics of culture include: learned and shared mainly on basis of intuition, traditions, initiations, symbols, values, and principles, etc. These cultural elements have a greater influence on Pakistani investors as beliefs and ideas are formed from unique social influence in society.SECP may arrange lectures for awareness of investors to sensitize them about the reductive role of cultural biases. In this way, the potential of stock investment in the market will be realized leading to significant strides in the economic development of Pakistan. Moreover, the

study did not find any evidence of a relationship between Overconfidence and Disposition effect on Investor's decision making.

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