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Sentimental Influence of Investors on Investment Decision Making in Pakistan Stock Exchange

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Abstract

The current study explores the impact of investor sentiments on individual investment decision-making in Pakistan Stock Exchange (PSX). These factors range from religion, overconfidence, affect heuristics, and demographic variables. Some of these factors impact negatively on an investment decision but, at the same time, others could help the investors reach logical and rational decisions. Primary data was used to conduct this study. A questionnaire was developed to gather data from the respondents. The sample size included 200 stock investors and brokers from PSX. Convenience sampling technique was used, while E-Views was used as a statistical tool to test the hypotheses. Regression analysis deduced that overconfidence and religion have a significant relationship with investment decision-making, while affect heuristics have an insignificant relationship with investment decision-making. The demographics of the investors were taken as the moderating variable.

Keywords: affect heuristics, demographics, investors' decision-making, investors' sentiments, overconfidence, religion

Introduction

The philosophical concept of a well-functioning and efficient market states that stock market prices reflect all the available information about the financial market security, while rational investors basically follow this or that approach in their investments. This tends to convey the essence or perception of financial behavior which is also influenced by the global financial collapse. This or that approach states that most investors do business on the basis of emotions and not on the basis of basic knowledge, and these types of investors who invest on the basis of emotions are called sound trading (Anon, 2018).

Traditional financial theory has no principles for the investments of the investor, but rather the theory is that competition for rational investors, who try to diversify their portfolio to achieve better statistical results, will extend to equity where prices are equally present in the future, and where expected returns depend

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on risk, that is, systematic of that short-term phase (Currier et al., 2013). Although there are few unreasonable investors that traditional belief suggests are unscrupulous investors. Their demands have been removed by the prosecutors and have no significant effect on prices (Averbeck et al., 2011).

Sentiments are the intellectual property of the investor, they establish the affect they've on them, on their decisions and the way an investor thinks (Keller et al., 2006). Behavioral Finance is a new strategy for the existing marketing areas, at least in part, in response to the problems encountered by the standard model (Belmi et al., 2020). In a broader context it states that when some traders are completely unreasonable, savings conditions can be better seen using a model. Behavioral Finance describes how psychological power enables traders and managers to make investment decisions (Menkhoff et al., 2013). Ethics Funds provide evidence that human behavior is reversible and unpredictable. This is because the feelings of the investors were not visible but can be guessed. If one can measure the price change correctly, price changes are recognizable and thus price changes reflect the behavior of the investors that in turn reflects the feelings of the investors (Ziemann, 2011).

Decision-making is the art of coping with complex situations. It is a wise process to choose and differentiate between a few possible alternatives. Making decisions without some planning may be reasonable but may not end well (Belmi et al., 2020). Decision-making is usually a special art of selecting a particular solution. Investors differ from one another in a variety of ways and in terms of human characteristics such as socioeconomic status, knowledge, competitiveness and age (Barberis & Thaler, 2018). Few thinks that a more serious threat leads to a recurring risk of retaliation, while others think that it creates a smaller threat to a more secure return (Ziemann, 2011).

The current research is an attempt to search out the association between investor sentiments and investment decisions, as well as the impact of censorship as an intermediary between investor sentiments and investment decisions (Nowell & Alston 2007). The current study helps investors know the reason as to why their decisions become unreasonable and thus face losses while investing. This research thus assists the investor to make informed decisions and become conscious of how their emotions affect their decision-making. Ethical finance is significant for professionals, helping them to alter their actions or strengthen their relationship with the customers. Behavioral funds thus help the investors investing in stocks, to become less prone to psychological pressure and develop better investment strategies (Statman, 2014). Financially sound knowledge helps investors identify

potential errors and the affect these errors have on investment decisions, thus keeping them safe (Belmi et al., 2020).

The objectives of this research are to establish the views of the investors and their impact on investment decisions. Thus, it is important to find a reason that changes an investor's mindset while making a decision than to analyze the mental capacity for this task.

The research is organized as follows: in the next section, the background is discussed, followed by a description of the research design, results and findings are discussed in the following section, the last section includes limitations and recommendations for future research.

Literature Review

Behavioral Finance and Sentiments

People with a sound knowledge of general finances were basically concerned with practical indications but did not rely on them completely. This established a pattern which was based on good self-control (Shiller, 2003).

Traditional financial theory does not set out rules for investors, but rather the idea is that competition between cogent investors, that is, who try to expand their portfolio to achieve statistical results, will also try to achieve equity where prices are equal to the current value for future income, and where expected profit depends on risk, thus setting up a systematic pattern in a short period of time (Goldin 2004). Although there are few unreasonable investors, the traditional view suggests that the demand for unreasonable investors is set aside by prosecutors and has little effect on prices (Slovic et al., 2007).

Investor sentiment is measurable and they are clearly visible, such as the example of executive driven stocks like Vitol and the positive impact on the company and the stock market (Nowell & Alston, 2007). An investor's feelings deal with many difficulties, such as measuring the emotional side in understanding the fundamental differences in another investor's perceptions, and knowing a particular stock that attracts a speculator (Jahanzeb, 2012).

Census

Jenkins (2006) deduced that outcomes were positively associated with changes in the adult segment and negatively correlated with changes in the older segment. I also found that the expiration of the next 50 years was not predicted to escalate into controversial phases even with boomer pensions (Jahanzeb, 2012). In addition to the loss of revenue from the stock market by the increase in the number of older

residents, prices are set to rise. Moreover, in the absence of significant changes, profits are expected to decrease over time (Keller et al., 2006).

The results of Hirshleifer (2015) have numerous implications for the development of hypothetical designs. First, previous cohort models suggest that even if these market changes were reasonably projected experience with age varies and thus affects the relative cost of business instruments. The investigator initiates strong scientific evidence that human evolution is making significant gains in future global data. Nowell and Alston (2007) found that men who were healthy, educated, about to retire, had financial support, and experience of growing on their own, tend to be more confident. This research deduced that they were overconfident (Hertwig et al., 2003).

Overconfidence

According to the research conducted, the findings suggest overconfidence was a result of vulnerability and lack of commitment to the financial market.This research further clarifies that overconfidence was enhanced by job tensions, and was most evident in the complexity of two assets. Thus, the researcher found that those members thought that their lifestyle was largely controlled by external forces resulting in overconfidence, and, surprisingly, men were less at risk of overconfidence than women (Kim & Nofsinger, 2008).

To be accurate, men were not overconfident in one investment activity, but exhibited this in two legacy situations (however, not so much). Conversely, age has a negative impact on the first study (albeit not so much), however it works as a positive indicator on the second study, indicating that overconfidence is acquired with age and becomes part of the two investment practices (Goldin, 2004). Thus, the auditor's findings may contain important recommendations for making financial decisions. This research also deduced that investors highly valued their financial commitment, and felt reluctant to switch to investment opportunities (Averbeck et al. 2011).

Affect Heuristics

In this regard, the display design option plays a very important part. It has been revealed, for example, in both medical diagnosis and legal practice, that the way in which important information is presented influences judgment and choice (Barberis & Thaler, 2018). Here, the knowledge of a presentation's structure (waves / possibilities) has a different impact on how to make decisions that are more effective compared to the lower levels of logical thinking which is an important new reality for an expert. And the fact that efficiency in logical thinking influences

search data in multi-factor options constitutes to be an important result in the real-world systems (Koehler & Harvey, 2008).

Studies show that different heuristics were useful for different types of predictive processes. In particular, the heuristic approach is highly dependent on whether the prediction is created from data set in memory, from data about the degree of variability different from the predicted set, or from data about the previous level of prediction (Beller, 2017).

Hertwig et al. (2013) gathered the experiments and endorsed that people arise with a one-step prediction in advance with a presenter-and-correct empirical view appropriate to the data series. When styles are lost, they use a heuristic mathematical edition that can take a consistent dependence but does not develop a similar pattern (Beller, 2017). Also, where styles exist but there is only a low level of consecutive reliance an additional heuristic view can be used.

Hypotheses

H_1: Overconfidence has a positive and significant effect on investment decisions.
H_2: Affect Heuristics has a positive and significant effect on investment decisions.
H_3: Religion has a positive and significant effect on the investment decisions.
H_4: Overconfidence has a positive influence on investment decisions with the moderation impact of demographic variables.
H_5: Affect heuristics has a positive effect on investment decisions with moderation impact of demographic variables.
H_6: Religion has a positive effect on investment decisions with moderation impact of demographic variables.
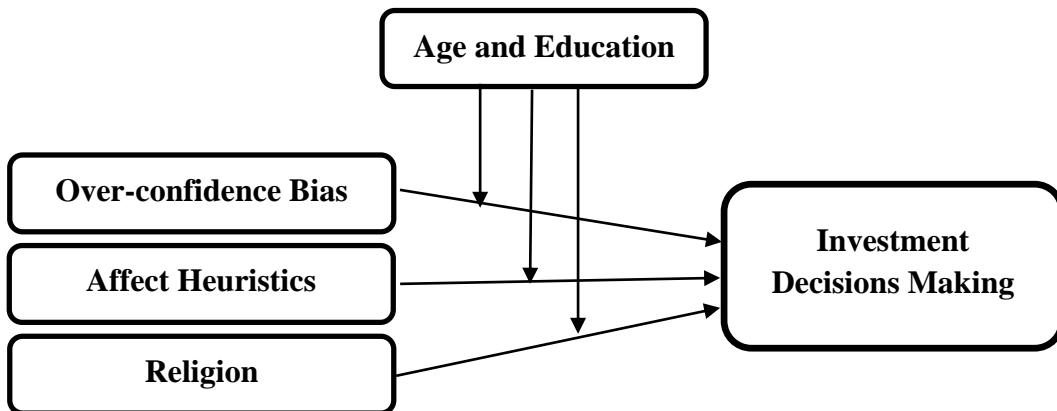
Research Methods

The current research included investors in Pakistan Stock Exchange. This research was held to assess the emotional state of investors when taking investment decisions regarding stock exchanges and the effect of demographic measurements on investor sentiment. The literature supports that emotions and feelings influence the decision-making of investments in the stock exchange. The current study was conducted considering Pakistan Stock Exchange. The study period was 4 months from May 2020 to August 2020. The variables are measured by a list of questions. The category of research is basic and dynamic; the basic research is designed to know the key theories of the research and powerful research is done to assess the special effects of investors' opinion that influences the decision to invest in stock exchanges, thus measuring effect of human data on the investor's views in real time. 200 members were selected. The current study used a simple sampling

process to collect data. The questionnaire was compiled on a Likert scale that measures the individual interest in agreeing / disagreeing with the statement, where 1 stands for strong agreement and 5 stands for strong disagreement.

Figure 1

Theoretical Framework

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                    ┌─────────────────────┐
                    │  Age and Education   │
                    └─────────────────────┘
                         │    │    │
┌────────────────────┐   │    │    │         ┌──────────────────┐
│ Over-confidence Bias│──▶│    │    │         │                  │
└────────────────────┘   │    │    │────────▶│    Investment     │
┌────────────────────┐   │    │              │ Decisions Making  │
│  Affect Heuristics  │──────────────────────▶│                  │
└────────────────────┘        │              └──────────────────┘
┌────────────────────┐        │
│      Religion       │──────────────────────▶
└────────────────────┘
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Reliability

Researchers used reliability tests to determine the statistically significant results of the tool employed to gather data. The outcomes confirm the reliability of the metal, as Cronbach's Alpha values in table 1 are exceeded than the benchmark process of 0.6 benches for all variations and independent constructs on which it depends, therefore, the instrument is authentic. The standards of all constructs are more than 0.6 with the exception of one exception.

Table 1

Reliability

Descriptive	Cronbach's Alpha	N
Affect Heuristic	.760	5
Overconfidence	.732	5
Religion	.792	4
Investment Decision	.707	5

Descriptive Statistics

Descriptive statistics show that the data for all constructs is normal for the reason that the P value of each variable is lesser than 0.05, which means that data is according to the standard. The average value of overconfidence is 4.397, the average value of religion is 4.4575, and the average heuristic touch value is 4.37875, the average value of age is 0.855 and, the stated value of education is 0.29.

Neither does ordinance contribute to OSL neutrality, nor does it affect the conclusion that OLS is a balanced, unbiased assumption of Gauss-Markov's (Deaves et al., 2009). The norm is frequently observed as an excessive and potentially unsuitable accumulation to a regression model (Belmi et al., 2020).

Table 2

Descriptive Statistics

	OC	REL	AH	EDU	AGE	OCEDU	RELEDU	AHEDU	OCAGE	RELAGE	AHAGE
Mean	4.397	4.4575	4.37875	0.29	0.855	1.291282	1.281407	1.270101	3.725888	3.789141	3.724874
Median	4.4	4.5	4.5	0	1	0	0	0	4.4	4.5	4.5
Maximum	5	5	5	1	1	5	5	5	5	5	5
Minimum	3.4	3	2.75	0	0	0	0	0	0	0	0
Std. Dev.	0.372673	0.422447	0.439833	0.454901	0.352984	1.999916	2.01383	1.995949	1.590402	1.622743	1.595447
Skewness	-0.61817	-0.76555	-1.026839	0.925595	-2.01646	0.918616	0.952546	0.951646	-1.79897	-1.763466	-1.75548
Kurtosis	3.079239	2.996036	4.013313	1.856727	5.066142	1.887724	1.955792	1.951324	4.547177	4.471722	4.447173
Jarque-Bera	12.79023	19.53606	43.70329	39.44984	171.1126	37.47718	39.13457	39.15522	125.908	120.493	119.5754
P Value	0.00167	0.000057	0	0	0	0	0	0	0	0	0

Findings

Correlation Analysis

Consolidation table values indicate that there is not much coherence in the data. If overconfidence changes by 1% than religious values will change by 0.0563%, If over-confidence is 1% more than the number of heuristics involved, it will change by -0. 361911933, If over-reliance changes by 1% of educational values , it will change by 0.112188297. If excessively confidence is 1% as the number of years will change -0.135164432, if religion changes by 1% as the value of heuristics, it will change by -0.395402107. If religion changes by 1% as the value of education will change 0.10414763, if religion is changed by 1%, the number of years will change by 0.075093637. When it comes to heuristics it will change by 1% than the price of education will change by -0.043391426. Thus, when it comes to heuristics it will change by 1% than the age value will change by -0.094258522.

Table 3

Correlation Analysis

	OC	REL	AH	EDU	AGE	OCEDU	RELEDU	AHEDU	OCAGE	RELAGE	AHAGE
Mean	4.397	4.4575	4.37875	0.29	0.855	1.291282	1.281407	1.270101	3.725888	3.789141	3.724874
Median	4.4	4.5	4.5	0	1	0	0	0	4.4	4.5	4.5
Maximum	5	5	5	1	1	5	5	5	5	5	5
Minimum	3.4	3	2.75	0	0	0	0	0	0	0	0
Std. Dev.	0.372673	0.422447	0.439833	0.454901	0.352984	1.999916	2.01383	1.995949	1.590402	1.622743	1.595447
Skewness	-0.61817	-0.76555	-1.026839	0.925595	-2.01646	0.918616	0.952546	0.951646	-1.79897	-1.763466	-1.75548
Kurtosis	3.079239	2.996036	4.013313	1.856727	5.066142	1.887724	1.955792	1.951324	4.547177	4.471722	4.447173
Jarque-Bera	12.79023	19.53606	43.70329	39.44984	171.1126	37.47718	39.13457	39.15522	125.908	120.493	119.5754
P Value	0.00167	0.000057	0	0	0	0	0	0	0	0	0

Direct Effects

The Durbin-Watson estimate indicates that no automatic adjustment is problematic if the Durbin-Watson value is closer to two, indicating there is no automatic merger. Deprived of measurements, the statistics examined the outcomes that show that Durbin-Watson value is 1.93280. This number is closer to two, so, there are no problems to automatically sync the data.

In this regression, there is an important explanatory force because the values of T and the P suggest the value of the variable, when the value of T is higher than two and the value of P is lesser than 0.05, indicating that something different is important other than not-significant. The findings of the research show that the T value of overconfidence is 6.10276 indicating that the value is higher than two and the P value is higher than 0.00 which indicates that the P value is less than 0.05 meaning in both cases the difference is more independent. The T value of Religion is 2.5996 which indicate that the value is higher than two and the P value is 0.01 which indicates that the P value is lesser than 0.05 meaning in both cases the independent (religious) difference is highly significant. The T value of heuristics is 1.6942 which specifies that the value is lesser than two and P the value is 0.09 which indicates that the P value is higher than 0.05 which meant that in these cases it is dissatisfied with the independent constructs which are not important.

The adjusted R value displays how much the explanatory variable is defined by the predicted variable. In this research Adjusted R Square value is 0.468, suggesting that the predicted variables are defined at 46.7% by explanatory variables.

Table 4

OLS Regression (Direct Effects)

Variable	Coefficient	Std. Error	t-Statistic	P
C	0.578559	0.273876	2.112486	0.0359
OC	0.520248	0.085248	6.102767	0
REL	0.209083	0.080427	2.599683	0.01
AH	0.11783	0.069547	1.694247	0.0918
R-squared	0.476139	Adjusted R-squared	0.468121	
Durbin-Watson stat	1.932807			
F-statistic	59.38173	P value	0	

F-distribution values show that the absolute model is important either the P value of the F-distribution values is lesser than 0.05. The findings of the research

show that the P value of the F-distribution value is 0 which is lesser than 0.05 suggesting that the complete model is significant.

The Coefficient proposes that when one part fluctuates independently (above confidence) it clues to 0.520 fluctuations in dependency (Investment Decision). Coefficient recommends that if one-part changes independently (Religion) clues to 0.209 changes in the predicted variable (Investment decisions) are observed. Coefficient recommends that if one-part changes in an explanatory variable (Affect Heuristics) it results in a change (0.1178 variables).

Indirect Effects

The Durbin-Watson value indicates, there is no automatic adjustment problem if the Durbin-Watson value is closer to any two auto-correlations, besides the findings of the verified data show that the Durbin-Watson value is 1.898. This number is close to two so, there is no problem in automatically syncing the data.

In this regression there is an important explanatory force because the value of T and the P suggest the value of the variable, when the t-value is higher than two and the P value is lesser than 0.05 indicating that something different is important other than not significant. The findings of the research show that the t-value of overconfidence is 3.727 which specifies that the t-value is higher than two and the p-value of the overconfidence is 0.000 which specifies that the p-value is lesser than 0.05 which meant that in these cases explanatory variable is significant. The value of religion is 2.152 which show that the t- value is higher than two and the religious p-value is 0.032, which shows that the p-value is lesser than 0.05 which in these cases indicates that the explanatory variable (religion) is significant. The interdependent variability of overconfidence and education recommends that there is no integrated effect of OCEDU on dependency variables as the t-value of education is 1.118 which is less than two and the p-value of education is 0.26 indicating that the p-value is more than 0.05 it shows that in both cases the dissatisfaction with the explanatory variables (education) is not important. The diversity of religious and educational interactions suggest that there is no combined effect of RELEDU on the variables that depend on it because the t-value of education is 1.123 indicating that the value is lesser than two and p-value of education is 0.262 indicating that the p-value is higher than 0.05 that means if both these conditions are not satisfied separate independence (education) is not important.

The interactive variability of confidence and age recommend that a combined OCAGE impact the predicted variables because the t-value of OCAGE is 4.308

which is more than two and the p-value of OCAGE is 0 indicating that p-value is lesser than 0.05 which shows that both situations are satisfied thus the explanatory variable (OCAGE) is significant. The variability of religion and demographic variable (age) recommend that there is a combined effect of RELAGE on predicted variables because the t-value of RELAGE is 3.072 which shows that the t-value is more than two and the p-value of OCAGE is 0.002 which shows that the p-value is lesser than 0.05 which shows that both situations are fulfilled thus the explanatory variable (RELAGE) is significant.

The value of adjusted R square indicates shows how much variability depends on the definition of independent variability. In this research the R Square value is 0.251, signifying that the variable-dependent variables are defined by 25.18% in independent variables.

The F values show the total value of the model, if the p-value is lesser than 0.05 then the model is significant. The findings of the current research show that the p-value is lesser than 0.05 indicating that the overall model is significant.

The Coefficient suggests that if one-unit changes independently (OCEDU) it leads to a change of 0.207056 dependent variables (Investment Decision).

Table 5

OLS Regression (Indirect Effects)

Variable	Coefficient	Std. Error	t-Statistic	P
C	2.152245	0.374298	5.750082	0
OC	0.31843	0.08542	3.727819	0.0003
REL	0.160478	0.074563	2.152259	0.0327
EDU	0.076195	0.071217	1.069893	0.286
AGE	-0.006361	0.075413	-0.08434	0.9329
OCEDU	-0.207056	0.185039	-1.11898	0.2646
RELEDU	0.195067	0.173672	1.123191	0.2628
OCAGE	0.388058	0.09007	4.308383	0
RELAGE	-0.27287	0.08881	-3.07253	0.0024
R-squared	0.29345			
Adjusted R-squared	0.251888			
F-statistic	7.060564	Durbin-Watson stat		1.889231
Prob. (F-statistic)	0			

The Coefficient suggests that if one unit fluctuates independently (RELEDU) it leads to 0.195067 fluctuations of the predicted variable (Investment Decision). The

Coefficient recommends that if one unit fluctuates independently (OCAGE) it leads to 0.388058 fluctuations in the predicted variable (Investment Decision). The Coefficient recommends that when a single unit changes independently (RELAGE) it leads to -0.27 predicted variable (Investment Decision).

Implications

This study was conducted to examine the impact on investment decisions. It looks at the relationship between the independent and confident variables and the predicted variables. Religion, Heuristics and Overconfidence are independent variables whereas Investment decisions are the predicted variable, on the other hand demographic acts as a moderator variable that includes age and education (Fernando & Jackson, 2006). Religion has a good relationship with investment decisions and over the years shows a good relationship as a manager and education shows a negative role as a manager. Previous accounting shows that traders were willing to invest in resources that were classified as sharia guaranteed or culturally responsive and less risky profits (Statman, 2014). Previous literature supports this study.

Overconfidence has a positive effect on investment decisions and age also presides but education has a negative influence on overconfidence and investment decisions, earlier men who were educated and retired, had financial leadership, and the knowledge to invest, were often found to be confident Averbeck et al. (2011), this shows that there is no contradiction between the current and previous research.

Heuristics has a negative relationship with investment decisions, according to earlier publications the most prominent opinion has an impact on the investors' financing Nosic and Weber (2010), so there is controversy among current and past analysts that there is a positive relationship between heuristics and investment decisions.

The current study of financial ethics is another new financial concept and there is not yet much research done in this field that could be helpful to academics and ethical financial students to conduct research in the future. The current study helps to introduce a new financial concept to financial students. As it focuses on Pakistan Stock Exchange, investment decisions, it can be helpful to stock investors and Pakistani stockbrokers. Investors may not know how their investment decisions turn out to be unreasonable and thus they face losses. Investors face difficulties when collecting data because most of them do not want to share their information.

In addition to this, the current study is limited to Pakistan Stock Exchange and only one sector of investment.

Conclusion and Recommendations

The current research examines the impact of investor sentiments on investment decisions in stocks. Emotions such as religion, overconfidence and affect heuristics have been evaluated as explanatory variables and investment decisions as predicted variables. Demographics act as moderator variable and is thus is a gap in the current study. After analyzing the results, it is concluded that emotions have a positive impact on investment decisions expected by one heuristics fluctuation. In addition, it has been concluded that being a 40-year-old manager with education, has a positive impact on the emotional well-being when making investment decisions.

The current research focuses on one field and has narrow sensitivity. There are proposals for future investors that they should take up all aspects of investment such as financial institutions, T bill and security. In addition to risk-like variables, asset growth should be considered as an independent variable. The current study was conducted with a small sample size; in the future a larger sample size should be part of the study.

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