

## Do Behavioral Finance Factors influence Stock Investment Decisions of Individual Investors? (Evidences from Saudi Stock Market)

Talal Alquraan<sup>1</sup> (Corresponding Author), Ahmad Alqisie<sup>2</sup>, Amjad Al Shorafa<sup>3</sup>

<sup>1</sup>Faculty of Business and Finance, World Islamic Sciences and Education University, P.O. Box 1101 – Amman, 11947 Jordan

Tel: 962-79-5656606 E-mail: [tqurran@yahoo.com](mailto:tqurran@yahoo.com)

<sup>2</sup>Faculty of Business and Finance, World Islamic Sciences and Education University, P.O. Box 1101 – Amman, 11947 Jordan

E-mail: [Ahmadalqisie@yahoo.com](mailto:Ahmadalqisie@yahoo.com)

<sup>3</sup>College of Business Administration CBA, Almajma University, P.O. Box 66-Almajma, 11952 Kingdom of Saudi Arabia

E-mail: [ashorafa@yahoo.com](mailto:ashorafa@yahoo.com)

**Abstract:** The main objective of this study is exploring the behavioral finance factors influencing the stock investment decision of individual investors at Saudi Stock Market as one of the vital emerging markets in the Middle East. To conduct the study, (140) questionnaire has been distributed to the participants on randomly basis. Cronbach's Alpha was used to test the validity of the instrument, in addition Multiple Linear Regression and ANOVA methods were used to test the hypotheses. Results of the study indicated that, behavioral finance factors (Loss Averse, Overconfidence and Risk Perception) have significant effect on the stock investment decisions of individual investors in Saudi Stock Market, while Herd has insignificant effect. The demographic variables (Gender, Age, Education, Income and Experience) don't make any significant differences in the investor decision, except the demographic variable (Education) make significant differences in the investor decision.

[Talal Alquraan, Ahmad Alqisie, Amjad Al Shorafa. **Do Behavioral Finance Factors influence Stock Investment Decisions of Individual Investors?(Evidences from Saudi Stock Market)**. *J Am Sci* 2016;12(9):72-82]. ISSN 1545-1003 (print); ISSN 2375-7264 (online). <http://www.jofamericanscience.org>. 12. doi:[10.7537/marsjas120916.12](https://doi.org/10.7537/marsjas120916.12).

**Keywords:** Behavioral Finance, Classical Finance, Investment Decisions, Individual Investors, Saudi Stock Marke.

### 1.Introduction

Studies of Financial theories has been developing since several last decades, these studies trying to understand the rationality of investors in the financial markets by using new models. The traditional financial theories have assumed that when investors take stocks investment decisions, they don't have difficulty because they are well-informed, careful and consistent.

Modern portfolio theory and Capital Asset pricing Model assumes that investors are not puzzled regarding the size of information presented to them and not controlled by their behavioral finance factors. But several studies in the developed capital markets found that many phenomena regarding stock investment decisions cannot be explained. Investors in capital asset exchanges, typically taking many different and important decisions, the most common are taking investment decisions in order to maximize their wealth; others are considering seeking market timing techniques to maximize their wealth. In contrast, some investors are more risk averter, so they are following stocks that have low risk levels, at the same time; other investors are accepting high risk stocks but applying some diversification techniques to control the unsystematic risks. As a result, studying

the impact of behavioral finance of investor on stock investment decisions became very important; hence investors rarely depends on the assumptions of the financial theories when they made their decisions.

Therefore the main objective of this study is to exploring the behavioral finance factors influencing the stock investment decisions of individual investors at Saudi Stock Market as one of the emerging market in the Middle East; hence several studies had different results in identifying any of those factors as the most influential on stock investment decision in the other markets. Our research studied the impact of the following behavioral finance factors on stock investment decisions: Loss aversion (avoiding losses is more important than acquiring gains), Overconfidence (overestimate investors knowledge, underestimate risks, and exaggerate their ability to control events), Herding (following the trend), Risk Perception (individual's assessment of the inherent risk in a given situational problem).

### 2.Problem Statement

In traditional financial theory, investors are assumed to be rational when they seeking for wealth-maximization, following basic financial rules, their investment strategies and decisions are built on

trading-off between risks and return (Baker et al, 1977). But when it comes to investing, their emotional inclinations, ingrained thought patterns, and psychological biases (overconfidence, Herding, regret,...) may affect their rationality (Jagongo and Mutswenje, 2014). Accordingly, this study tries to answer the following questions:

- Do behavioral finance factors (Risk Averse, Overconfidence, Herding, and Risk Perception) affect the stock investment decisions of individual investors in Saudi stock Market?
- What are the main behavioral finance factors that may affect the investment decisions of individual investors in Saudi stock Market?
- Is there any significant differences in the stock investment decision of individual investors in Saudi stock Market refer to the demographic variables (Gender, Age, Income, Education and Experience)?

### 3.Hypothesis's of the Study

**H01:** The behavioral finance factors (Risk Averse, Overconfidence, Herding, and Risk Perception) don't affect the stock investment decisions of individual investors in Saudi Stock Market.

**H02:** There is no significant differences in the stock investment decisions of individual investors refers to the demographic variables (Gender, Age, Income, Education, Experience) in Saudi Stock Market.

### 4.Significance of the Study

The stock market of Saudi Arabia consider as one of the most important emerging market in the Middle East, since it has the biggest trading volume among all financial markets in the region, thus the researchers hopes that the results of the study will improve the decisions making of the individual investors through identifying the most important behavioral finance factors, which may affect their decisions when they invest in stocks. Also to the knowledge of the researchers, this study is the first in the stock market of Saudi Arabia.

### 5.Literature Review

Behavioral finance is the study of the influence of psychology on the behavior of financial practitioners and the subsequent effect on markets (Sewell, 2007). Behavioral finance argues that some financial phenomena can understood using models in which some investor are fully rational, which mean that their investment decisions are made according to risk and return Considerations. One of the famous theories was developed by Harry Markowitz about formation investment portfolios and how investors can choose portfolio assets with different risk-return combinations.

of Over the last years, portfolios managers began to study other concepts in this regard in addition to expected risk and return, psychological factors such as sentiment, overreaction, overconfidence... etc.

Behavioral Finance is the combination of psychological and financial factors that investigates what happens in markets in which some of the investors display human limitations and complications, hence psychology systematically explores human judgment, behavior, well-being, and it can teach us important facts about how humans are differ (Rabin, 1996).

Accordingly, investor's behavior in stocks market derives from psychological principles of decision making which explain why investors buy or sell stocks. Shefrin (1999) defined behavioral finance as "A rapidly growing area that deals with the influence of psychology on the behavior of financial practitioners". Ricciardi and Simon (2000a) stated that, behavioral finance attempts to explain and increase understanding of the reasoning patterns of investors including the behavioral factors involved and the degree to which they influence the decision-making process. A according to these definitions, we will introduce the theories that explain the investor's decisions as follows:

#### 5.1 Traditional Decision Theory

The classic financial theory assumes that investors are rational when they are making investment decisions. Investment rationality refers to using unbiased valid reasoning to buy or sell assets and build portfolios (Chandra and Kumar, 2008). This unbiased reasoning is viewed in the trade-off between risk and return. In general, a standard finance decision assumes that all investors are wealth maximizes (Masomi and Ghayekhloo, 2011). Classical decision theory assumes that, investors has well informed systematic decisions, which are in their own self-interest, and acting in a world of complete certainty and the risk is measured by the variance of the probability distribution of possible gains and losses (March and Shapira, 1987).

The standard finance is generally considered to be publication of "portfolio selection", Harry Markowitz (1952), described how rational investors should build portfolios to maximize expected return and minimizes risk. In this way, risk and return are the main factors in investment decision (Sharpe, 1985). Accordingly, the portfolio will be more efficient if it offers the highest return given a specific risk or the minimum risk given a specific return.

Sharpe (1964) developed the Capital Asset Pricing Model (CAPM). He incorporated the Markowitz mean-variance-optimizer investor as well as the concept of efficient markets. The CAPM assumes that; Investors can borrow and lend at the same interest rate, the risk-free rate; all investors are rational in their decisions and create efficient portfolios; all investors' identical expectations for investment cash flow in the future and all investors are

planning for one holding period. As a result, the main implications of the CAPM are; (1) The market Portfolio is mean-variance efficient; (2) The average return is an increasing function of beta (beta is a Systematic risk measure, captures the reaction of different individual securities or portfolios to changes in the market portfolio).

### 5.2 Behavioral Theory

It is argued that people are not nearly as rational as traditional finance theory makes out. For investors who are curious about how emotions and biases drive share prices, behavioral finance offers descriptions and explanations in this regard (Sewell, 2005). The idea that psychology drives stock market movements flies in the face of established theories that advocate the notion that markets are efficient. Proponents of efficient market hypothesis say that any new information relevant to a company's value is quickly priced by the market (Ben McClure, 2004). Behavioral finance psychology has explored various levels of rationality and irrationality behavior in which individuals and groups may act (Ritter, 2003).

Here are some theories regarding behavior of the investor which explain the factors that affect his decisions in the stock market:

#### 5.2.1 Regret Theory

In investing, the fear of regret can make investors either risk averse or motivate them to take high levels of risk, so this theory deals with the emotional reaction for investors experience after realizing they have made an error in their evaluation and then their decision, faced with the prospect of selling a stock, investors become emotionally affected by the price at which they purchased the stock (Forgel & Berry, 2006). Therefore, they avoid selling it as a way to avoid the regret of having made a bad investment, as well as the embarrassment of reporting a loss (Pompian, 2006). Regret theory can also hold true for investors who find a stock they had considered buying but did not want to buy in value. Some investors avoid the possibility of feeling this regret by following the conventional wisdom and buying only stocks that everyone else is buying, rationalizing their decision with "everyone else is doing it" (Jagongo and Mutswenje, 2014).

#### 5.2.2 Theory of Overconfidence

Overconfidence is another characteristic that affects investor decision and his risk perception, it says that people generally rate themselves as being above average in their capabilities; they also overestimate the precision of their knowledge and their knowledge relative to others (Ricciardi and Simon, 2000). Also, overconfidence causes investors underestimate risks and exaggerate their ability to control events (Strong, 2006).

#### 5.2.3 Over/Under Reacting Theory

It says that investors get optimistic when the market recovers. On the contrary, investors become extremely pessimistic when the market goes into recession. A consequence of anchoring, placing too much importance on recent events while ignoring historical data, is an over- or under-reaction to market events which results in prices falling too much on bad news and rising too much on good news. At the peak of optimism, investor greed moves stocks beyond their intrinsic value (Hong and Stein, 1999). But how does this behavior affect stock prices? The answer is that investors who rely on the representativeness heuristic become overly pessimistic about past losers and overly optimistic about past winners, and this instance of heuristic-driven bias causes prices to deviate from fundamental value'. Specifically, investors overreact to both bad and good news. Therefore, overreaction leads past losers to become underpriced and past winners to become overpriced (Shefrin, 1999).

#### 5.2.4 Herding Theory

«Herd theory» is the behavior of an individual who gives up his decision in favor of the group. The first formulation of this theory as philosophical science is the English Biologist «Hamilton Smith» in which he said: «Every member of a group that serves itself first and foremost as reducing the risk by engaging in group and conducting their behavior without thinking or planning». Herd theory is the economic theory pertaining to the stock market, the stock market is reflected by this theory clearly especially when declining markets or collapse as investors get hysterical selling out of fear of loss and the loss of their capital which is called "herd sale".

Several papers use a statistical measure of herding put forward by Shleifer, and Vishny (1997). They define and measure herding as the average tendency of a group of money managers to buy (sell) particular stocks at the same time, relative to what could be expected if money managers traded independently. While it is called a herding measure, it really assesses the correlation in trading patterns for a particular group of traders and their tendency to buy and sell the same set of stocks.

#### 5.2.5 Risk Perception

It is the subjective judgment that people make about the characteristics and severity of a risk. Risk perception refers to people's judgments and evaluations of hazards they (or their facilities, or environments) are or might be exposed to (Ricciardi, 2004).

### 5.3 Behavioral Finance and Investment Decisions

Behavioral finance seeks to find how investor's emotions and psychology affect investment decisions. It is the study of how people in general and investors in particular make common errors in their financial

decision due to their emotions. It is nothing but the study of why otherwise rational people take some really thumbs investment decisions. Decision making is a process of choosing best alternatives among a number of alternatives. This decision has come out after a proper evaluation of all the alternatives. Decision making is the most complex and challenging activity of investors. Every investor differs from the others in all aspects due to various factors like demographic factor, socioeconomic background, educational level, sex, age and race (Chaudhary, 2013).

#### *5.4 Empirical Studies on Behavioral Finance*

The behavioral models have been most successful in explaining stock price anomalies related to overreaction, under-reaction, momentum strategies, herding behavior, firm size effect and BV/MV ratio effects. Several studies have been made in the field of the impacts of financial behaviors on the investments decisions of individual investors in different markets around the world, in order to identify the main factors that may affect the decision making process.

Barber and Odean (1999) in their study highlighted two common mistakes investors make: excessive trading and the tendency to disproportionately hold on to losing investments while selling winners, they further that these systematic biases have their origins in human psychology. The tendency for human beings to be overconfident causes the first bias in investors, and the human desire to avoid regret prompts the second. Kent and Titman (1999), in their study explains why investors are likely to be overconfident and how this behavioral bias affects investment decisions. They suggests that investor overconfidence can potentially generate stock return momentum and this momentum effect is likely to be the strongest in those stocks whose valuation requires the interpretation of ambiguous information, They added that Portfolio strategies that might be suggested by the overconfidence theory realize extremely high and persistent abnormal returns.

Dremen and Lufkin (2000) presented evidence in their study that investors under and overreaction exists and is a part of the same psychological process. Chan (2001) found in his study, that a large change in stock price unsupported by news, on average was followed by a statistically anomalous price trend reversal over the next month, he also added that price trend reversals often occur when a majority of market agents follow the same investing strategy (buying or selling), unsupported by new information.

Al-Tamimi (2005) studied the factors influencing the investors behavior on the UAE financial market, the results shows that the six most influencing factors in order of importance were: expected corporate earnings, get rich quick, stock marketability, past

performance of the firm's stock, government holdings and the creation of the organized financial markets and the least influencing factors to be expected losses and minimizing risks. Zoghlami and Matoussi (2009) in their study tried to identify the main psychological biases that influence the Tunisian investor's behaviors and that may drive a momentum effect in stock returns. They found that the Tunisian investor's behaviors are driven by five psychological factors which are: precaution, under confidence, conservatism, under opportunism and informational inferiority complex. A study by Ton (2011) analyzed the tendency of investors to realize gains too early and the reluctance to liquidate losing positions. The analysis was based on the complete transaction data of the Estonian stock market. The study found the presence of the disposition effect (loss aversion) on the market as having a profound impact on the investment decision making by stock market investors thus reinforcing the position that behavioral finance plays a significant role on the stock market.

Al-Horani and Haddad (2011), tries to identify the main psychological biases that may influence the investment behavior and drive a momentum effect in (ASE). The results showed that psychological factors that seem to highly influence the investment behavior of Jordanian investors are: self attribution, opportunistic behavior, sensitivity to rumors, mimicking attitude and to a less extent overconfidence.

Fares and Khamis (2011) investigated individual investors' stock trading behavior at the Amman Stock Exchange, Jordan. They identified four behavioral factors (age, education, accessibility to the internet and interaction between the investor and his/her broker) that influenced investors' trading decisions. According to the authors, investor's age, education, and his/her accessibility to the internet had a significant and positive effect on stock trading, while the interaction between the investor and his/her broker, had a highly significant and negative effect.

Gunay and Demirel (2011), in their study concluded that there is an interaction between demographic and financial behavior factors in five of the financial behavior factors (overreaction, herding, cognitive bias, irrational thinking, and investment decisions). They found that gender has interaction with overconfidence), and the level of individual savings has an interaction with four of the financial behavior factors (overreaction, herding, cognitive bias, and irrational thinking).

Hooy and Ahmad (2012), in their study tried to investigate the link between herd behavior and Monday irrationality, the main finding of their study is that herd behavior is the determinant of Investor's Monday irrationality in Malaysian stock market, particularly in small cap industries, which means that

investors decisions were affected by psychological biases such as cognitive dissonance in trading during Monday.

A study by Abdulaziz (2013) found out that “securities markets do usually overreact to earning signals there by affecting the stock market investor” decision making due to the unpredictability of the stock prices hence forcing them into applying their personal bias in decision making. This evidence from the study is consistent with the spirit of the behavioral models.

Chitra and Jayashree (2014). In their study (Does Demographic Profile Create a Difference in the Investor Behavior?). They found that unlike the classical finance theory, individual investors do not always act rationally while making investment decisions. Individual investors suffer from several psychological and emotional biases; investor behavior is subject to representativeness, conservatism, regret aversion, price Anchoring and overconfidence factors. Apart from these biases, on the basis of demographic variables, it is found that gender, age, education and experience have an interaction with behavioral factors in investment decisions.

Sadiq Ishaq (2014), in their study concludes that there is an association between demographic characteristics and investors level of risk tolerance. Result shows that demographic factors like investor’s age, academic qualification, income level, investment knowledge, and investment experience have significant effect on the behavior of investors.

## 6. Research Methodology

This study employed a survey research design in order to reproducing an extensive and exact picture of the stock market of Saudi Arabia behavioral financing/ investment decisions. It should be noted that the behavioral and decision making nature of stock market of Saudi Arabia investors is vital in understating how they operate and thus the choice of this kind of research design which is important in understanding and interpreting behavioral finance trends. Therefore our study employed a questionnaire in attempting to find the key behavioral finance factors that guide stock market investor’s investment and financial decisions in the stock market of Saudi Arabia.

### 6.1 Target Population and Sample

The target population of this study was all individual investors in the stock market of Saudi Arabia in year 2015, since the names or number of investors in the market are not available, the researchers distributed (140) questionnaire randomly during December 2015 in six working days of the market. Also, the researchers will use (SSM) as a representative of Saudi Stock Market in the study body.

### 6.2 Data Collection Tools

Primary data was collected by questionnaire

which was examined by the researchers personally depending on several previous studies, the questionnaire consist of (41) question divided into two sections. The first section contain (5) questions concerning socio-economic characteristics of the investors. The second section contains (36) question covers the behavioral finance factors and the stock investment decision of individual investors in (SSM). Likert scale five point were used ranking from (1) strongly disagree to (5) strongly agree.

## 7. Data Analysis

The data in this study was coded and tabulated. The data were analyzed using descriptive statistics, multiple regression and ANOVA. Number of questionnaires received back from sample study is (128), eight (8) of them are not valid for analysis, which mean rate of valid questionnaires is (86%).

### 7.1 Test Validity and Reliability

The researchers assess the scales content validity by four academicians in two universities, upon that the researchers made the changes to the first draft in terms of eliminating, adding or rewording some of the questions included in that draft. Reliability of the measure was evaluated by using Cronbach’s Alpha for the five variables, this measure allow us to measure the reliability of the different categories and if the coefficient greater than or equal to 0.6 is consider acceptable and a good indicator of reliability (Sekaran, & Bougie, 2012). The results indicate that the values of Cronbach’s Alpha for the five variables are (Loss Aversion 0.672, Overconfidence 0.716, Herding 0.814, Risk Perception 0.693, and Investment Decision 0.755). When using the combined construct validity coefficient, a scale is deemed to be valid if the Cronbach’s Alpha exceeds the value of 0.7 (Ranganahan and Henley, 2008). Since the overall Cronbach’s Alpha (0.76) exceeded the minimum acceptable level we can say the instrument was sufficient and satisfactory.

### 7.2 Descriptive Statistics

#### 7.2.1 Descriptive Statistics of Demographic Variables

Table (1) summarized the socio-economic characteristics of the respondents in (SSM).

As shown in Table (1), 81.7% of investors in the market are males, while 18.3% are female investors. This result is supported the fact that capital markets are sometimes risky and women generally seen to be risk averse. The age profile of respondent’s show that 38.3% of them were in the age category of 18- less than 30 years, 26.7% were in the age category of 30 – less than 40 years and 24.2% were in the age category of 40 – less than 50 years, which means that 89.2% of respondents’ age is less than 50 years. The results also show that 75.8% of respondents are highly educated (41.7% Diploma, 25.8% Bachelor, 8.3% Master or PhD), while 18.3% of respondents have high school

and 5.8% have less than high school education. According to distribution of monthly income, it observe that most of investors in the sample study have high monthly income, for instance, 19.2% of investors have more than 15,000 R monthly income and 65% of the investors have monthly income between (5000 – 15000 R). This result is matching the fact that Saudi Arabia consider being one of the richest country in the Middle East, hence it has the biggest reserve of oil in the world. Finally, the analysis of the

years of investors experience which to some extent determines the experience of the investors' investment selection, shows that 33.3% of investors had less than 5 years capital market experience, with only 12.5% having more than 15 years, while 54.2% of investors have experience between (5 – 15 years). As Mahmood et al. (2011) asserted, knowledge of investors in financial markets and their past experience contribute a lot towards the risk assessment in various products.

Table 1: Investors' Socio-Economic Characteristics

| Demographic variable                 | Investors' Grouping (n=120)     | frequency | Percent |
|--------------------------------------|---------------------------------|-----------|---------|
| <b>Gender</b>                        | Male                            | 98        | 81.7    |
|                                      | Female                          | 22        | 18.3    |
| <b>Age</b>                           | 18- less than 30 years          | 46        | 38.3    |
|                                      | 30-less than 40                 | 32        | 26.7    |
|                                      | 40- less than 50                | 29        | 24.2    |
|                                      | More than 50                    | 13        | 10.8    |
| <b>Education</b>                     | Less than high school           | 7         | 5.8     |
|                                      | High school                     | 22        | 18.3    |
|                                      | Diploma                         | 50        | 41.7    |
|                                      | Bachelor                        | 31        | 25.8    |
|                                      | Graduate degree (Master or PhD) | 10        | 8.3     |
| <b>Monthly Income</b>                | Less than 5000 R                | 19        | 15.8    |
|                                      | 5001- 10,000 R                  | 32        | 26.7    |
|                                      | 10,001- 15,000 R                | 46        | 38.3    |
|                                      | More than 15,000 R              | 23        | 19.2    |
| <b>Experience Years in investing</b> | Less than 5                     | 40        | 33.3    |
|                                      | 5- less than 10                 | 37        | 30.8    |
|                                      | 10- less than 15                | 28        | 23.3    |
|                                      | More than 15                    | 15        | 12.5    |

### 7.2.2 Descriptive Statistics of Behavioral Finance Factors and Stock Investment Decision Making,

Table number (2) summarized descriptive statistics of the overall means and standard deviation of respondents to the questions measures the financial behavioral factors (Loss Averse, Overconfidence, Herding, Risk Perception) and stock investment decision.

From Table 2, it's clear that individuals investors in (SSM) are characterized by; (1) Investors prefer avoiding losses than acquiring gains (Loss averse with  $M = 3.83$ ,  $SD = 0.45$ ). (2) Investors have good judgments and evaluation of hazards which might be exposed to (Risk Perception with  $M = 3.38$ ,  $SD = 0.52$ ). (3) Investors think they are smarter and have better information than they actually do (Overconfidence with  $M = 3.12$ ,  $SD = 0.79$ ). (4) Investors don't have tendency to mimic the actions of a large group irrespective of whether or not they would make the decision individually (Herding with  $M = 2.96$ ,  $SD = 0.81$ ). (5) They are willing to take investment decisions in the market with ( $M = 3.38$ ,  $SD = 0.52$ ).

Table 2: Overall Mean and Standard Deviation of Respondents to Questionnaire

| Variable                   | N. of Questions | Overall Mean | Standard Deviation |
|----------------------------|-----------------|--------------|--------------------|
| <b>Loss Averse</b>         | 6               | 3.83         | 0.45               |
| <b>Overconfidence</b>      | 5               | 3.12         | 0.79               |
| <b>Herding</b>             | 5               | 2.96         | 0.81               |
| <b>Risk Perception</b>     | 6               | 3.38         | 0.52               |
| <b>Investment Decision</b> | 14              | 3.38         | 0.52               |

### 7.3 Hypothesis Testing

#### First Main Hypothesis:

**H01: The behavioral finance factors (Risk Averse, Overconfidence, Herding, and Risk Perception) don't affect the stock investment decisions of individual investors in the Saudi Stock Market.**

Table number (3) presents the results of multiple linear regression test of the effect of behavioral finance factors on the stock investment decisions of individual investors in (SSM).

From table 3, the results show that behavioral finance factors in (SSM) affect the investment decisions of individual investors; hence the F. statistic equal (12.23) with P. value (0.000),  $R^2$  is (0.74) which means that 74% of variation in stock investment decisions of individual investors explained by behavioral finance of investor. The results show that behavioral finance factors Loss Averse has ( $t = 3.86$ ,

$Sig = 0.000$ ), Overconfidence has ( $t = 4.320$ ,  $Sig = 0.000$ ), Risk Perception has ( $t = - 2.198$ ,  $Sig = 0.042$ ) are all significant and affect the stock investment decisions of individual investors, while Herding has ( $t = 0.112$ ,  $Sig = 0.911$ ) is insignificant and doesn't have any effect on stock investment decisions. It's also noted that, Overconfidence has the most influence on stock investment decisions of investor with coefficient ( $\beta = 0.38$ ), then Loss Averse with coefficient ( $\beta = 0.28$ ) and Risk Perception in the last order of importance with coefficient ( $\beta = - 0.19$ ). Depending on the above results we accept the alternative hypothesis that: The behavioral finance factors (Risk Averse, Overconfidence, Herding, and Risk Perception) have significant effect on the stock investment decisions of individual investors in (SSM).

Table 3: Results of (Multiple Linear Regression) of the Effect of Behavioral Finance Factors on Stock Investment Decisions in (SSM)

| Independent Variables | $\beta$ | Std. Error | t       | Sig   | $R^2$ | F     | sig     |
|-----------------------|---------|------------|---------|-------|-------|-------|---------|
| Loss Averse           | 0.28    | 0.064      | 3.860   | 0.001 | 0.74  | 12.23 | 0.000** |
| Overconfidence        | 0.38    | 0.058      | 4.320   | 0.000 |       |       |         |
| Herding               | 0.08    | 0.056      | 0.112   | 0.911 |       |       |         |
| Risk Perception       | - 0.19  | 0.074      | - 2.189 | 0.042 |       |       |         |

\*\* : Significant at 1 %

#### Second Main Hypothesis:

**H02: There is no significant differences in the stock investment decisions of individual investors refers to demographic variables (Gender, Age, Income, Education, Experience) in Saudi Stock Market.**

To test this hypothesis we used independent samples t. test and ANOVA, table (4) summarized the results. From table 4 we can observe that gender of investor in (SSM) doesn't make any significant differences in his investment decision, since value of t. statistic is (- 0.878) and ( $Sig = 0.143$ ) which is greater than ( $\alpha = 0.05$ ). Also regarding age, income and

experience of investor in (SSM) don't make any significant differences in his investment decision; hence F. statistic and Sig of F for the three variables are not significant (Age,  $F = 1.843$ ,  $Sig = 0.143$ ; Income,  $F = 0.920$ ,  $Sig = 0.455$ ; Experience,  $F = 1.241$ ,  $Sig = 0.298$ ). But the education variable make significant differences in the investor decision in (SSA), since ( $F = 2.738$ ,  $Sig = 0.032$ ). In order to find which category of education makes differences in the investor decision we run (Post Hoc Multiple Comparisons Test). Table 5 present the results.

Table 4: Results of Independent Samples t. test and ANOVA of Significant Differences in the Stock Investment Decisions of Individual investors refer to Demographic Variables

| Demographic Variable |                | Mean   | Standard Deviation | Mean Difference | t           | Sig    |        |
|----------------------|----------------|--------|--------------------|-----------------|-------------|--------|--------|
| Gender               | Male           | 3.3561 | 0.5315             | 0.1071          | - 0.878     | 0.382  |        |
|                      | Female         | 3.4642 | 0.4462             |                 |             |        |        |
| Age                  | Sum of Squares |        |                    | df              | Mean Square | F      | Sig    |
|                      | Between Groups | 1.449  |                    | 3               | 0.483       | 1.843  | 0.143  |
|                      | Within Groups  | 30.346 |                    | 116             | 0.262       |        |        |
| Income               | Between Groups | 0.986  |                    | 4               | 0.246       | 0.920  | 0.455  |
|                      | Within Groups  | 30.810 |                    | 115             | 0.268       |        |        |
| Education            | Between Groups | 2.761  |                    | 4               | 0.690       | 2.738* | 0.032* |
|                      | Within Groups  | 29.034 |                    | 115             | 0.252       |        |        |
| Experience           | Between Groups | 0.990  |                    | 3               | 0.330       | 1.241  | 0.298  |
|                      | Within Groups  | 30.806 |                    | 116             | 0.266       |        |        |

\*: Significant at 5 %

From table 5 we can observe that education category Bachelor Degree of individual investors has significant difference mean with education category Diploma (M.D = 0.3520, Sig = 0.003) to the benefit of investors whom have Bachelor degree, which means that, the stock investment decisions of individual investors in (SSA) is differ between investors according to education categories (Bachelor Degree and Diploma Degree). Contrary, the other education categories don't have significant differences between

them could make differences in the investment decisions of individual investors. Depending on the above results, we accepted the null hypothesis that, Demographics variables (Gender, Age, Income, Experience and Education) don't make any significant differences in the stock investment decisions of individual investors in (SSA), except the education variable make significant differences in the investor decision.

Table 5: Results of Post Hoc Multiple Comparisons Test for Demographic Variable (Education)

| Variable  | Category of Education                      | Mean Difference | Standard Error | Sig     |
|-----------|--|-----------------|----------------|---------|
| Education | Bachelor – Less than high school           | 0.3765          | 0.2102         | 0.076   |
|           | Bachelor - High school                     | 0.1293          | 0.1400         | 0.358   |
|           | Bachelor – Diploma                         | 0.3520          | 0.1148         | 0.003** |
|           | Bachelor - Graduate degree (Master or PhD) | 0.1377          | 0.1827         | 0.452   |

\*\*: Significant at 1 %

## Results

According to the descriptive statistics of the sample study respondents; 81.70% of respondents are males and 18.30% are females, majority of them (89.20%) are under 50 years old. 75.80% of respondents are highly educated (Diploma, Bachelor, Master and PhD). 65% of respondents have monthly income between (5000-15000R) and lastly 54.20% of investors have investment experience between (5-15

years). Depending on the descriptive statistics we can conclude that, individual investors in (SSM) are young, highly educated, rich comparing to others countries in the Middle East and well experienced in taking investment decisions. Also, the statistics show that; individual investors prefer avoiding losses than acquiring gains; have good judgments and evaluation of hazards which might be exposed to; think they are smarter and have better information than they actually



do and don't have tendency to mimic the actions of a large group irrespective of whether or not they would make the decision individually.

According to hypothesis testing, the results show that behavior finance of individual investors in (SSM) affect their stock investment decisions, hence 74% of variation in investment decisions can be explained by the financial behavioral factors (Risk Averse, Overconfidence, Herding, and Risk Perception). This result supported the study results of (Barber and Odean, 1999; Ton, 2011; Al-Horani and Haddad, 2011). Further, the results show that behavioral finance factors; Loss Averse has positive significant effect on the investor decision, which means, when the investor try to minimize his losses he avoid investing in the stocks. This result is in line with study results of (Al-Tamimi, 2005; Ton, 2011); Overconfidence has positive significant effect on the investor decision, which means that investor rely heavily on his knowledge and experience in taking investments decisions. This result supported the study findings of (Barber and Odean, 1999; Al-Horani and Haddad 2011; Abdulaziz, 2013); Risk perception has negative significant effect on the investor decision, which means that, investor assess risks might be exposed to, and if he feel that investing in some stocks will cause losses, at that time he will stop investing. This result supported the study finding of (Zoghalmi and Matoussi, 2009). While the behavioral finance factor (Herd) has positive insignificant effect on the stock investment decision of individuals' investors, which means that, investors don't follow the actions of the other investors in the market, and this result support the result mentioned above, that investors in the (SSM) are Overconfident.

The results of testing the second hypothesis "There is no significant differences in the stock investment decision of individual investors refers to demographic variables (Gender, Age, Income, Education, Experience), we conclude that the demographic variables (Gender, Age, Income and Experience) don't make any significant differences in the investment decisions of individual investors in (SSA), except the educational variable has significant differences in the stock investment decision, especially the educational category (Bachelor degree – Diploma degree) and to the benefit of Bachelor Category.

### Conclusion

This study tried to explore the influence of the behavioral finance factors on stock investment decisions of individual investors in (SSM) as one of the vital emerging markets in the Middle East. To conduct the study, questionnaire has been built to measure the effect of behavioral finance factors on stock investment decision. (140) questionnaire has

been distributed to the participants on randomly basis, only (120) of them valid for analysis. Cronbach's Alpha was used to test the validity of the instrument, in addition Multiple Linear Regression and ANOVA methods were used to test the hypotheses. Results indicated that, behavioral finance factors (Loss Averse, Overconfidence and Risk Perception) have significant effect on the stock decision of individual investors in (SSM), while Herd has insignificant effect. The demographic variables (Gender, Age, Education, Income and Experience) don't make any significant differences in the investor decision, except the demographic variable Education make significant differences in the investor decision.

### Future Recommendation

It is recommended for future studies to take in consideration the effects of others behavioral finance factors which are not included in this research and to take larger sample to confirm the current finding of this research. Also, it is recommended to take other economic factors which may affect the decision of investors beside the behavioral finance factors in (SSM).

### References

1. Abdulaziz, M., A. (2013). It's all overreaction: earning momentum to value/growth. The journal of behavioral, finance and economics- JBF&E Vol. 3 issue 2.
2. Al-Horani A. and Haddad F., (2011), Exploring Investors' Behavior: Evidence from Amman Stock Exchange. *Jordan Journal of Business Administration*, Volume 7, No. 3, 481-493.
3. <https://journals.ju.edu.jo/JJBA/article/download/2720/2435>
4. Al-Tamimi, H., (2005). Factors influencing individual investor Behavior: An Empirical study of the UAE Financial Market. IBRC Athens, Aryan Hellas Limited. Available at: [www.aryanhellas.com/107/ha.pdf](http://www.aryanhellas.com/107/ha.pdf).
5. Baker, H.K., M.B. Hargrove, and J.A. Haslem. (1977) "An Empirical Analysis of the Risk Return Preferences of individual investors". *Journal of Financial and Quantitative Analysis*, Vol. 12, No. 3, pp. 377-389.
6. Barber, B. and Odean, T. (1999). The Courage of Misguided Convictions, *Financial Analysts Journal*, November/December 1999, 41-55. <http://faculty.haas.berkeley.edu/odean/papers%20current%20versions/faj%20novdec99%20barber%20and%20odean.pdf>.
7. Ben McClure (2004). An Introduction to Behavioral Finance. Available at: [www.investopedia/articles/02/11250.asp](http://www.investopedia/articles/02/11250.asp).

8. Chandra, A., & Kumar, R. (2008). Decision Making in the Stock Market: Incorporating Psychology with Finance. In the Proceedings of the Conference on Forecasting Financial Markets in India at IIT Kharagpur, India. Available at: <http://ssrn.com/abstract=1501721>.
9. Chan, W.S. (2001). Stock price reaction to news and no-news: Drift and reversal after headlines. *NBER Working Paper Series*. Available at: <http://www.nber.org/~confer/2001/bfs01/chan.pdf>.
10. Chaudhary, A., K. (2013). Impact of Behavioral Finance in Investment Decisions and Strategies – A Fresh Approach. *International Journal of Management Research and Business Strategy*, Vol. 2, No. 2, 85-92.
11. Chitra, K., and Jayashree, T., (2014). Does Demographic Profile Create a Difference in the Investor Behavior? *The International Journal of Business & Management*, Vol 2, Issue 7. 24-30. [http://www.theijbm.com/force\\_download.php?file\\_path=wpcontent/uploads/2014/08/5.BM1407-014.pdf&id=369](http://www.theijbm.com/force_download.php?file_path=wpcontent/uploads/2014/08/5.BM1407-014.pdf&id=369).
12. Dremen, D. & Lufkin, E. (2000). Investor overreaction: evidence that its basis is psychological. *Journal of Psychology and Financial Markets*, Vol. 1, No. 1, 61-75. <http://www.signallake.com/innovation/DremanLufkin2000.pdf>.
13. Fares, A. R. F., & Khamis, F. G. (2011). Individual Investors' Stock Trading Behavior at Amman Stock Exchange. *International Journal of Economics and Finance*, 3(6), 128 – 134.
14. Fogel, O. and Berry, T. (2006). The disposition effect and individual investor decisions: the roles of regret and counterfactual alternatives. *Journal of Behavioral Finance*, 7 (2), 107–116.
15. Gunay, S.G. and Demirel, E. (2011). Interaction between Demographic and Financial Behavior Factors in Terms of Investment Decision Making. *International Research Journal of Finance & Economics*; 2011, Issue 66, 127-156.
16. Hong and Stein (1999). A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets. *The Journal of Finance*, VOL. LIV, NO. 6., 2143-2184. <http://www.princeton.edu/~hhong/jf-mom.pdf>.
17. Hooy, R., and Ahmad, Z., (2012). The role of Herd behavior in Determining the investors Monday irrationality. *ASIAN academy of management journal of accounting and finance*, Vol. 8, No. 2, 1-20. [http://web.usm.my/journal/aamjaf/vol%208-2-2012/AAMJAF8-2-2012\(1-20\).pdf](http://web.usm.my/journal/aamjaf/vol%208-2-2012/AAMJAF8-2-2012(1-20).pdf)
18. Jagongo, A., and Mutswenje, V. (2014). A survey of the Factors Influencing Investment Decisions: The Case of Individual Investors at the NSE. *International Journal of Humanities and Social Science*, Vol. 4, No. 4, 92-102.
19. Kent D. and Titman S., (1999), Market Efficiency in an Irrational World. *Financial Analysts Journal*, Volume 55 Issue 6, 28-40. [http://www.kentdaniel.net/papers/published/faj\\_9\\_9.pdf](http://www.kentdaniel.net/papers/published/faj_9_9.pdf).
20. Mahmood, I., Ahmad, H., Khan, A. Z., & Anjum, M. (2011). Behavioral Implications of Investors for Investments in the Stock Market. *European Journal of Social Sciences*, Vol. 20, No (2), 240 - 247.
21. Markowitz, Harry. 1952. "Portfolio Selection". *Journal of Finance*, March, 77-91.
22. March, J. G., and Shapira, Z. (1987), Managerial perspectives on risk and risk taking, *Management Science*, Vol. 33, No. 11.
23. Masomi, S. R., & Ghayekhloo, S. (2011). Consequences of human behaviors' in Economic: the effects of Behavioral Factors in Investment decision making at Tehran Stock Exchange. *International Conference on Business and Economics Research*, 1, 234-237.
24. Pompian M., (2006). Behavioral Finance and Wealth Management. USA: John Wiley and sons.
25. Rabin, M., (1996). Psychology and Economics, Department of Economics University of California – Berkeley September 28, 1996.
26. Ranganathan, S. K., & Henley, W.H. (2008). Determinants of Charitable Donation Intentions: A Structural Equation Model. *International Journal of Non-Profit and Voluntary Sector Marketing*, 13, 1 -11.
27. Ricciardi, V., and Simon, H. (2000a). The case for behavioral finance: A new frontier. The Northeast Business & Economics Association, 27th Annual Conference, Islandia, New York.
28. Ricciardi, V. (2004). A risk perception primer: A narrative research review of the risk perception literature in behavioral accounting and behavioral finance. *Working paper*.
29. Ritter, J. R. (2003). Behavioral Finance, *Pacific-Basin Finance Journal*, 11 (4), 429-437. <https://site.warrington.ufl.edu/ritter/files/2016/01/Behavioral-Finance.pdf>
30. Sadiq, M., and Ishaq, H.,(2014). The Effect of Demographic Factors on the Behavior of Investors during the Choice of Investment: Evidence from Twin Cities of Pakistan. *Global Journal of Management and Business Research*, Volume 14 Issue 3. 46-56. [https://globaljournals.org/GJMBR\\_Volume14/7-The-Effect-of-Demographic-Factors.pdf](https://globaljournals.org/GJMBR_Volume14/7-The-Effect-of-Demographic-Factors.pdf)
31. Sekaran, Uma, & Bougie, Roger (2012). Research Methods for Business: A skill building

- approach, (5<sup>th</sup> ed.), New York, NY: John Wiley & Sons Inc.
36. Sewell, M. (2005). *Behavioural Finance*, University of Cambridge.
  37. Sewell, M. (2007). *Behavioural Finance*, University of Cambridge, revised (2010) <http://www.behaviouralfinance.net/behaviouralfinance.pdf>.
  38. Sharpe, William F. 1964. "Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk", *Journal of Finance*, 19, September, 425-442.
  39. Sharpe, William F. 1985. *Investments*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey.
  40. Shefrin, H. (1999). *Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing*, Boston, MA: Harvard Business School Press, 1999. Revised version published 2002, New York: Oxford University Press.
  41. Shleifer, A. and Vishny, R. (1997). The limits of arbitrage, *Journal of Finance*, 52 (1), 35-55.
  42. Strong, R. A. (2006). *Practical Investment Management*, 4th edition. Mason, OH: Thomson Higher Education, Thomson: South-Western.
  43. Ton.T. (2011). Reverse disposition effect of foreign investors. *Journal of behavioral finance*, 2011.
  44. Zoghalmi, F., and Matoussi H., (2009), A Survey of the Tunisian Investors' Behaviour, *International Research Journal of Finance and Economics*, Issue 31, 66-81.

9/25/2016