نموذج رقم (1)

## إقـــــرار

أنا الموقع أدناه مقدم الرسالة التي تحمل العنوان:

Behavioral Factors Influencing Investment Decision Making : An Empirical Study of Palestine Stock Eachange

أقر بأن ما اشتملت عليه هذه الرسالة إنما هو نتاج جهدي الخاص، باستثناء ما تمت الإشارة إليه حيثما ورد، وإن هذه الرسالة ككل أو أي جزء منها لم يقدم من قبل لنيل درجة أو لقب علمي أو بحثي لدى أي مؤسسة تعليمية أو بحثية أخرى.

## DECLARATION

The work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification

| | | |
|---|---|---|
| Student's name: | سحر محمد هاشم ابو بنا | اسم الطالب: |
| Signature: | | التوقيع: |
| Date: | ٢٠١٤ / ١١ / ١٠ | التاريخ: |

**The Islamic University – Gaza**

**Deanery Of Higher Studies**

**Faculty Of Commerce**

**Dep. Of Business Administration**

# Behavioural Factors influencing investment decision making:

## An empirical study of Palestine Stock Exchange

**Prepared by**

**Sahar Mohammed Abu Nada**

**Supervised by**

**Dr. Faris Abu Moa'mer**

**A Thesis Submitted In Partial Fulfillment of the Requirements for the Degree of Master of Business Administration**

**June, 2013**

بسم الله الرحمن الرحيم


الجامعة الإسلامية – غزة
The Islamic University - Gaza

عمادة الدراسات العليا
هاتف داخلي: 1150


الرقم Ref ج س غ/35/
التاريخ Date 2013/07/06

# نتيجة الحكم على أطروحة ماجستير

بناءً على موافقة عمادة الدراسات العليا بالجامعة الإسلامية بغزة على تشكيل لجنة الحكم على أطروحة الباحثة/ **سحر محمد هاشم أبو ندى** لنيل درجة الماجستير في **كلية *التجارة*/ قسم إدارة الأعمال** وموضوعها:

## Behavioral Factors Infiuencing Investment Decision Making: An Empirical Study of Palestine Stock Exchange

وبعد المناقشة التي تمت اليوم السبت 27 شعبان 1434هـ، الموافق 2013/07/06 الساعة الثانية عشرة ظهراً، اجتمعت لجنة الحكم على الأطروحة والمكونة من:

| | | |
|---|---|---|
| أ.د. فارس محمود أبو معمر | مشرفًا ورئيسًا | ..... |
| د. وائل حمدي الدايـة | مناقشًا داخليـًا | ..... |
| د. بهاء الدين أحمد العريني | مناقشًا خارجيًا | ..... |

وبعد المداولة أوصت اللجنة بمنح الباحثة درجة الماجستير في **كلية *التجارة*/قسم إدارة الأعمال**.

***واللجنة إذ تمنحها هذه الدرجة فإنها توصيها بتقوى الله ولزوم طاعته وأن تسخر علمها في خدمة دينها ووطنها.***

**والله ولي التوفيق ،،،**

**عميد الدراسات العليا**

**أ.د. فؤاد علي العاجز**


P.O. Box 108, Rimal, Gaza, Palestine fax: +970 (8) 286 0800 فاكس Tel: +970 (8) 286 0700 هاتف ص.ب. 108 الرمال، غزة، فلسطين
public@iugaza.edu.ps www.iugaza.edu.ps

# DEDICATION

I dedicate this modest effort to my beloved mother whose love, care and supplications helped me to reach this accomplishment, to the soul of my beloved late father who loved me, cherished me and encouraged me through my life, to my sisters and brothers especially my eldest sister Nada who inspired me, was and is still my raw model in life. To my sons: Al Baraa and Amro.

# ACKNOLEDGEMENT

**This study would not have seen the light of day without the help I received from various sources. For invaluable feedback, discussions, support, and encouragement, so I would like to thank all people who provide me with assistance and advice. My deep, generous and grateful thanks are directed to my supervisor Dr: Faris Abu Moamer who supported me with his generous academic contributions to the research. Thanks and gratitude are also acknowledged to Dr: Wael El Daya who has a distinguished role in the improvement of this research.**

# Table of Contents

## Contents

# List of Tables

## List of Figures

# ABSTRACT

This research entitled " Behavioural Factors influencing investment decision making : an empirical study of Palestine Stock Exchange" is an attempt to discuss the impact of behavioural biases as mentioned in Kahneman and Tversky theories of Prospect and Heuristics theory . The theoretical framework related to this issue has been mentioned and a relevant literature is reviewed. The literature review consists of some theoretical studies, as well as other practical ones. The methodology of the research is the quantitative one where a questionnaire was designed, distributed to a sample of 400 individual investors in Palestine Stock Exchange. In addition, findings of the research are discussed in relation to research hypotheses and conclusions are drawn.

## DEFINITIONS OF KEY TERMS

These definitions are quoted from Pompian. M. Michael, (2006)

- **Overconfidence:**

It can be summarized as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities. In overconfidence, subjects overestimate both their own predictive abilities and the precision of the information they've been given. So, investors overestimate their ability and the accuracy of the information they have.

- **Representativeness:**

Two primary interpretations of representativeness bias apply to individual investors.

First : Base-Rate Neglect: In base-rate neglect, investors attempt to determine the potential success of, say, an investment in Company" A" by contextualizing the venture in a familiar, easy-to-understand classification scheme.

Second: Sample-Size Neglect:

In sample-size neglect, investors, when judging the likelihood of a particular investment outcome, often fail to accurately consider the sample size of the data on which they base their judgments.

Decision makers in this instance tend to form decisions by observing patterns that may not be relevant or even truly apparent.

- **Anchoring:**

It is a psychological heuristic that influences the way people intuit probabilities. Investors exhibiting price anchoring are often influenced by purchase "points"—or arbitrary price levels or price indexes—and tend to cling to these numbers when facing questions like "Should I buy or sell this security?"

- **Mental Accounting:**

First coined by University of Chicago professor Richard Thaler, mental accounting describes people's tendency to code, categorize, and evaluate economic outcomes by grouping their assets into any number of nonfungible (noninterchangeable) mental accounts. Consequently, individuals allocate wealth to separate mental compartments and ignore fungibility and correlation effects.

- **Loss Aversion Bias:**

Loss aversion bias was developed by Daniel Kahneman and Amos Tversky in 1979 as part of the original prospect theory specifically, in response to prospect theory's observation that people generally feel a stronger impulse to avoid losses than to acquire gains.

- **Regret Aversion Bias:**

People exhibiting regret aversion avoid taking decisive actions because they fear that, in hindsight, whatever course they select will prove less than optimal. Basically, this bias seeks to forestall the pain of regret associated with poor decision making. Therefore,

individuals make decisions in a way that allows them to avoid feeling emotional pain in the event of an adverse outcome.

- **Gamblers fallacy:**

In the gambler's fallacy, an individual erroneously believes that the onset of a certain random event is less likely to happen following an event or a series of events.

- **Availability:**

Availability bias is a form of adverse selection, where investors place inappropriately large weighting on the relevance of information that is simply the most easily available Hence; investors overstate the probabilities of recently observed or experienced events because the memory is fresh.

- **Self-control:**

Self-control bias is a human behavioural tendency that causes us to consume today at the expense of saving for tomorrow. Self-control bias can also be described as a conflict between people's overarching desires and their inability, stemming from a lack of self-discipline, to act concretely in pursuit of those desires.

# Chapter one: The outline of the research

- **Introduction**
- **Research problem**
- **Research Purpose**
- **Research Objectives**
- **Variables of the study**
- **Conceptual framework**
- **The importance of the study**
- **Research methodology**

## 1.1 Introduction:

This chapter aims at drawing an outline of the research problem, objectives, population, sample , variables of the study , research hypotheses, the importance of the study, research methodology and research parameters briefly.

## 1.2 Research problem:

In business world, there are millions of decisions made around the world every minute. Investment decisions are not an exception of this statement. Behavioural factors affecting the decision making process in the world of investment are many and various. One type of these factors is related to investors' psychological compositions which are responsible for their financial behaviour.

The behavioural factors influencing investment decision making are many and haven't been studied in Palestine in general and in The Gaza Strip in particular before, Hence, this will be the first research to try to uncover the behavioural factors standing behind the investment decision making process as they are affecting the decisions made by investors in Palestine stock Exchange. So, what impact do behavioural factors have on individual investors' investment decision making in Palestine stock Exchange Market?

## 1.3 Research Purpose:

The purpose of this research is to uncover the main behavioural factors that influence the investment decisions taken in Palestine Stock Exchange.

## 1.4 Research Objectives:

There is one main objective: To investigate the impact of the behavioural factors within the domain of the Prospect and Heuristics theories on investment decision making of individual investors in Palestine Stock Exchange.

There are a number of sub objectives:

1- To measure the impact of overconfidence on the financial behaviour of individual investors in Palestine Stock Exchange
2- To measure the impact of loss aversion on the financial behaviour of individual investors in Palestine Stock Exchange.
3- To measure the impact of representativeness on the financial behaviour of individual investors in Palestine Stock Exchange.
4- To measure the impact of Price anchoring on the financial behaviour of individual investors in Palestine Stock Exchange.
5- To measure the impact of Gamble's fallacy on the financial behaviour of individual investors in Palestine Stock Exchange.
6- To measure the impact of availability on the financial behaviour of individual investors in Palestine Stock Exchange.
7- To measure the impact of mental accounting on the financial behaviour of individual investors in Palestine Stock Exchange.
8- To measure the impact of regret aversion on the financial behaviour of individual investors in Palestine Stock Exchange.

9- To measure the impact of self control on the financial behaviour of individual investors in Palestine Stock Exchange.

## 1.5 Research hypotheses:

1- Representativeness has an impact on individual investment decisions at Palestine Stock Exchange.
2- Anchoring has an impact on individual investment decisions negatively at Palestine Stock Exchange.
3- Overconfidence has an impact on individual investment decisions at Palestine Stock Exchange.
4- Gambler's fallacy has an impact on individual investment decisions at Palestine Stock Exchange.
5- Regret aversion has an impact on investment decisions at Palestine Stock Exchange.
6- Mental accounting has an impact on individual investment decisions at Palestine Stock Exchange.
7- Loss Aversion has an impact on individual investment decisions at Palestine Stock Exchange.
8- Availability has an impact on individual investment decisions at Palestine Stock Exchange.
9- Self control has an impact on individual investment decisions at Palestine Stock Exchange.
10- Differences between respondents in age, culture and education do not have an impact on investment decisions at Palestine Stock Exchange.

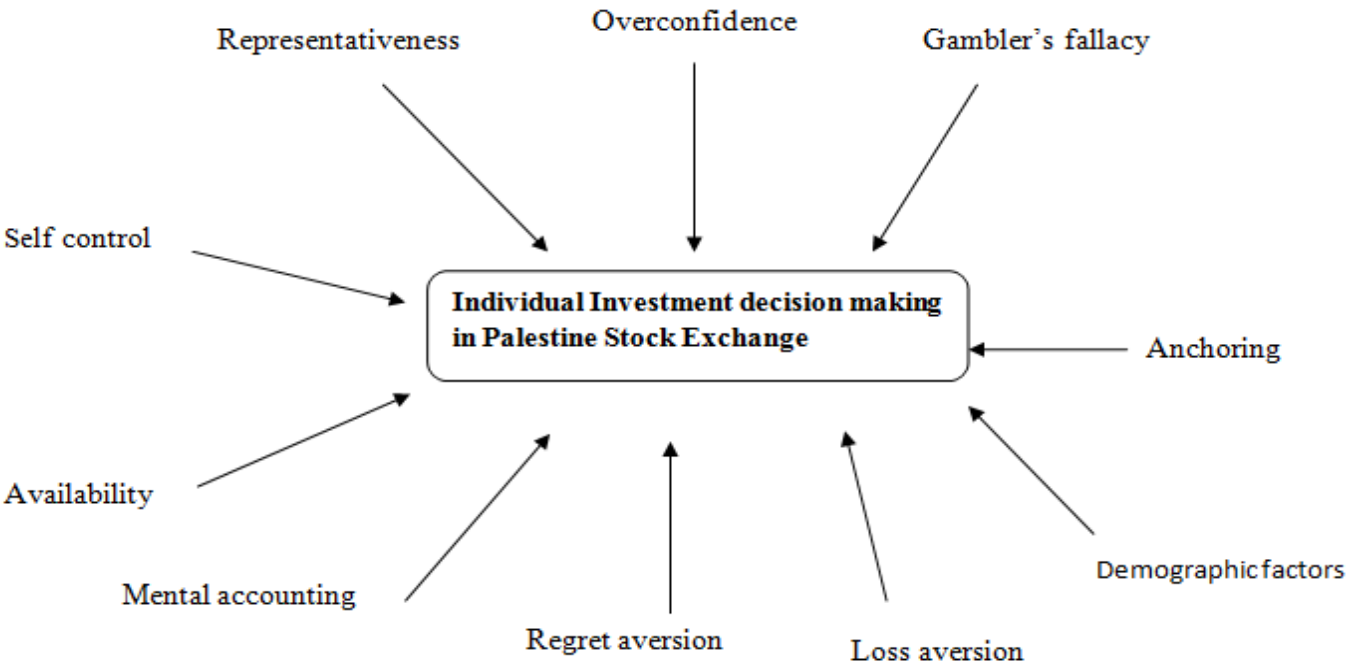


**Figure 1.1: conceptual framework** (Done by the researcher)

## 1.6 Variables of the study:

**1.6.1 Dependent variable**:" Individual Investment Decision making in Palestine Stock Exchange"

**1.6.2 Independent variable**: "Behavioural factors, included in prospect and heuristics theories and affecting individual investment decision"

Accordingly, behavioural factors to be discussed are: Representativeness, Overconfidence, Anchoring, Gambler's Fallacy, Loss aversion, Regret Aversion, Mental Accounting, Self control and Availability.

## 1.7 The **importance of the study:**

The study is important for many parties due to different reasons as follows:

1- It is a step on the long road of research accomplished by many researchers in this field and topic.

2- The study is important for the individual investor in Palestine Stock Exchange. For investors as decision makers, the most influencing factor / factors on investment decision making is crucial because this would affect their future financial plans.

3- The study is essential for the researcher because it is the first project for her on a topic related to behavioural finance which is a new domain in the Arab world and Palestine.

4- The study is important for the fellow students and researchers who are interested in studying behavioural finance.

## 1.8 Research methodology:

Descriptive analysis methodology will be applied, primary and secondary data sources, and data collection through a questionnaire designed particularly to address the issues of interest. The questionnaires will target the target sample, the individual investors in the Palestine Stock Exchange. The collected data will be analyzed by SPSS.

### 1.8.1 Research population:

The population of the study will be the individual investors in Palestine Stock Exchange in the Gaza Strip.

**Research sample**:

It includes Individual investors at Palestine Stock Exchange.

### 1.8.2 The parameters of the research:

#### *1.8.2.1 Time parameter:*

This research will be done in 2012and 2013.

#### *1.8.2.2 Place parameter:*

This research is limited by the place limits of the Gaza Strip.

#### *1.8.2.3 Human parameter:*

The sample in this research will include individual investors in Palestine Stock Exchange.

#### *1.8.2.4 Subject parameter:*

This study will be restricted to testing the impact of the behavioural factors included in the Prospect and Heuristics theories.

# Chapter two: Theoretical framework

- **Introduction**
- **Traditional Finance**
- **Emergence of Behavioural Finance**
- **Key theories in Behavioural Finance**
- **Key Features of Prospect Theory**
- **Palestine stock exchange**

## 2.1 Introduction:

It is universally acknowledged that knowledge does not come all at once and it goes into different stages of development and evolution. Behavioural finance is no exception of this statement. In this chapter, we will show the evolution of behavioural finance through different financial theories.

## 2.2 Traditional Finance:

The key goal of traditional finance theory is to understand financial markets using mathematical models that assume the rationality of investors. According to Nofsinger (2001), the field of finance has evolved over the past few decades based on the assumption that people make rational decisions and that they are unbiased in their predictions about the future. Individual investors are perceived as a rational lot that take cautiously weighted economically decisions every single time. A rational investor can be defined as a one that always (i) updates his beliefs in a timely and appropriate manner on receiving new information; (ii) makes choices that are normatively acceptable, Thaler, 2005. Traditional finance theoretical body consist of many financial constructs and trends such as Expected Utility Theory, CAPM, and Modern Portfolio Theory. However, we are going to concentrate on the main influential theory that shaped the financial scene for decades which is the efficient market hypothesis.

### 2.2.1 The efficient market hypothesis:

To stand on a solid ground, some definitions of Efficient Market Hypothesis should be mentioned before proceeding any further in elaboration of this matter. According to Fama's definition of market efficiency is logically intuitive: **it means that asset prices in financial markets fully reflect all the available information** (Fama (1970 [16]). The efficient market hypothesis (hereafter EMH) assumes that efficient markets are efficient because prices in the market incorporate all types of information to the degree that individual investors cannot beat the or outperform the market. EMH is popularly known as the random walk theory since prices are equally expected to rise or to fall and no investor can predict its path. Malkiel (1973) advocates that *'the market and stocks could be just as random as flipping a coin.* The term was firstly used by Fama 1965 who said that all types of information whether public or private reflects in stock prices. "**An 'efficient' market is defined as a market where there are large numbers of rational, profit-maximizers actively competing, with each trying to predict future market values of individual securities, and where important current information is almost freely available to all participants. So, if there are lots of investors in the financial market, we will get the highest best price. Otherwise, if somebody is making extra profits there, then other investors will come in".** This implies that efficient market hypothesis talks about information efficiency and how fast the share price in the market reflects the new information. Similarly, Karz (2012) states that *'Fama persuasively made the argument that in an active market that includes many well-informed and intelligent investors, securities will be appropriately priced and reflect all available information'*. Assumingly speaking, in an efficient market, competition among the various intelligent investors leads to a situation

where, at any point in time, actual prices of individual securities already reflect the effects of information based both on events that have already occurred and on events which the market anticipates to happen in the future. In other words, in an efficient market at any point in time the actual price of a security will be a good estimate of its intrinsic value."(Fama, 1995). Hence, EMH maintains that all stocks are perfectly priced according to their inherent investment properties, the knowledge of which all market participants possess equally (Fama, 1970). In conclusion , the efficiency intended in the efficient market hypothesis is that of information where it is supposed that financial markets incorporates all types of information into stock prices and that market has no memory and the coming of new information into the market causes the random movement of share prices. Accordingly, when investors try to gain profit by investing in undervalued stocks, EMH assumingly deems their trials futile. Put differently, an average investor- whether an individual, a pension fund, or a mutual fund- cannot hope to consistently beat the market and the vast resources that such investors dedicate to analyzing, picking and trading securities are wasted, Shleifer, 2004.

### 2.2.2 The theoretical foundations of the EMH:

EMH is built on three assumptions that form its theoretical bases: First, investors are thought to be rational and therefore to value securities logically. Second, if there are some irrational investors, their trades are random and therefore cancel each other out without affecting prices. Third, to the extent that investors are irrational in similar ways, they are met in the market by rational arbitrageurs who eliminate their influence on prices (Shleifer, 2004). Consequently, the main assumption of the efficient market hypothesis is

the idea that information is quickly and efficiently incorporated into assets prices at any point in time and cannot be used to foretell future price movements as assumed by the random walk theory. The information available in the market is of different types; public and private. Accordingly, the efficiency of the market is divided into three versions:

### 2.2.3 Three versions of the Efficient Market Hypothesis: Aziz and Sulaiman, (2012)

#### *2.2.3.1 The weak form market efficiency*

The weak form efficiency is related to past information where investors believe that the market incorporates all publicly known past information such as prices, trading volume, past financial statements, news, stories etc. a market is said to be efficient in the weak form if everyone in the financial market has access to such information and no opportunity for abnormal profits. Hence, all historical information would be useless to an analyst, as historical prices are reflected in current prices. In other words, what is the benefit of historical and outdated information to an investor? How does such information incorporate in the share market price any way? However, Abushamala (2011) proved that weak efficiency form is not applicable in (PEX) is not applicable.

#### *2.2.3.2 The semi-strong form market efficiency:*

Semi-strong form means that all public information is incorporated in the prices of financial assets in the financial market. Therefore, investors will not be able to select undervalued securities and no individual investor would be able to gain abnormal profits by exploiting such knowledge. In this form of efficiency, current information is available to everyone. Consequently, market prices already reflect all current available information that includes balance sheets, income statements, dividends, earnings, etc.

#### *2.2.3.3 The strong market efficiency:*

In the strong form of market efficiency, prices are supposed to incorporate all types of information whether public or private. The core assumption of this form is that no investor can make higher profits even with earlier access to inside information. The actual situation of financial markets relatively supports the weak and semi strong forms of efficiency and that market cannot be completely efficient in the strong form. This conclusion was drawn from the performance of professional investment managers. Hence, share price reflects all available, public and private, information and thus investors would not be able to take abnormal return on a regular basis by using private information. This is because share price reaction toward new information is instantaneous and unbiased. Consequently, there are close chances for people to take advantage of new information.

The discussions and debates around the Efficient Market Hypothesis prolonged for decades by theorists in the financial domain: some of them were pro market efficiency and the others were anti market efficiency. Thus, to be objective and to have the whole picture of the financial scene that formulated along decades, we have to mention the drawbacks of such hypothesis that led to the evolution of supplementary financial theories.

### *2.2.4 Problems and limitations with EMH: (Bergen J. V., 2011)*

As the case with any scientific theoretical endeavour, the efficient market hypothesis is criticized for a number of reasons which are mentioned by many opponents of the hypothesis. First, Efficient Market Hypothesis assumes that all investors perceive all available information in precisely the same manner as if they were acting as one calculator. However, the numerous methods for analyzing and valuing stocks pose some problems for the validity of the EMH. If one investor looks for undervalued market opportunities while another investor evaluates a stock on the basis of its growth potential, these two investors

will already have arrived at a different assessment of the stock's fair market value. Therefore, one argument against the EMH points out that, since investors value stocks differently, it is impossible to ascertain what a stock should be worth under an efficient market. Secondly, under the efficient market hypothesis, no single investor is ever able to attain higher profits than another with the same amount of invested funds: their equal possession of information means they can only achieve identical returns. According to the EMH, if one investor is profitable, it means the entire universe of investors is profitable. In reality, this is not necessarily the case. Thirdly, under the efficient market hypothesis, no investor should ever be able to beat the market, or the average annual returns that all investors and funds are able to achieve using their best efforts. This would naturally implies, as many market experts often maintain, that the absolute best investment strategy is simply to place all of one's investment funds into an index fund, which would increase or decrease according to the overall level of corporate profitability or losses. These problems mentioned above have led to a number of limitations: bounded rationality, limits of arbitrage and limits of subjective utility function.

#### 2.2.4.1 Bounded Rationality:

As assumed by EMH, individual investors are considered to be completely rational and able to use technology and many stock price evaluation tools and softwares that help them to take the right decision on time. Contradictory to this assumption, there are many anomalies that take place in stock markets that oppose this utopian situation. The bounded rationality is the idea that in decision-making, rationality of individuals is limited by the information they have, the cognitive limitations of their minds, and the finite amount of time they have to make a decision and the complex circumstances under which they

perform. It was proposed by Herbert A. Simon (1957) as an alternative basis for the mathematical models used for making decisions in economics and other related disciplines. Simon suggests that economic agents use mental shortcuts and rules of thumb" heuristics" to make decisions rather than a strict rigid rule of optimization. They do this because of the complexity of the situation, and their inability to process and compute the expected utility of every alternative action. Similarly, Daniel Kahneman (2003) proposes bounded rationality as a model to overcome some of the limitations of the rational-agent models in economic literature.

#### 2.2.4.2 Limits of Arbitrage:

Limits of arbitrage argues that arbitrageurs may not be capable of profiting from market dislocations and mispricing done by less or not rational investors, and psychology, that classifies all the possible types of deviations that we may see in the financial markets (Thaler and Barberis (2002). In a market with not-fully rational and rational agents, rational agents will not allow not-fully-rational investors to influence security prices by trading mispriced and dislocated securities through a process called arbitrage. Therefore, in an efficient market, there should be no arbitrage opportunities since competition will drive prices to their fundamental values. However, if non-rational investors are dominant in the market, it does not follow that prices in the financial markets will fully reflect all the available information and this is similar to arguing that there will be arbitrage opportunities (Herschberg, 2012). In the traditional finance theories, arbitrage should be riskless and arbitrage opportunities must not exist. However, researchers have found strong evidence to assert the opposite. Arbitrage is generally risky and limited. In fact, there are situations where arbitrage opportunities exist but do not quickly disappear. This is known in the

literature as limits to arbitrage and the idea is usually credited to Professors Shleifer and Vishny (Shleifer and Vishny 1997).

#### 2.2.4.3 The limits of the subjective utility function: The foundation of the prospect theory

The subjective utility function is one of the tools used strongly in standard finance to make investment decisions, in which an individual investor measures his or her own utility according to mathematical modeling of the desired benefit, depending on the available information about the economics of the market, before taking decisions related to investment. Therefore, the subjective expected utility (SEU) model provides the theoretical and mathematical framework that is most often used to analyze decisions under uncertainty. In the SEU model, uncertainty about the future is represented by a group of *states of the world*, which are statistically considered as mutually exclusive and exhaustive events. Possible outcomes for the decision maker are represented by a group of *ramifications* that could be amounts of money in the bank or more general "states of the person" such as health, pleasure, happy or unhappy experiences, and so on. The SEU model had a revolutionary effect on statistical decision theory and social science in the 1950s and 1960s, supplementing the computational basis for a broad range of social and economic theories under the broad heading of "rational choice," including the development of Bayesian methods of statistical inference, the emergence of decision analysis as an applied science studied in engineering and business schools, the establishment of game theory as a foundation for microeconomics, and the development of expected-utility-based models of portfolio optimization and competitive equilibria in asset markets by finance theorists. However, decision making process is not a mechanical process done by humans in a

machine-like way. Consequently, the fascination about the SEU began to fade out in the late 1970s, however, as an emerging body of behavioural decision research showed that subjects in laboratory experiments display an array of predictable "heuristics and biases" that are inconsistent with SEU theory. In conclusion, Shiller (2002) provided theoretical and empirical evidence to support the fact that CAPM, EMH, and other traditional financial theories did a great job in predicting and explaining certain events. However academics also started to find anomalies and behaviours which these traditional theories could not explain. So a new body of knowledge emerged to supplement the existed theories and paradigms of traditional finance. In other words, EMH has its own flaws that supported the emergence of a supplementary financial theory like behavioural finance. Robert Shiller in his article "from Efficient Markets theory to Behavioural finance" said that : browsing today again through finance journals from 1970, one sees some beginnings of reports of anomalies that did not seem likely to square with the efficient markets theory , even if they were not presented as significant evidence against the theory. Hence, by the start of the twenty-first century, the intellectual dominance of the efficient market hypothesis had become far less universal. Many financial economists and statisticians began to believe that stock prices are at least partially predictable. Therefore, A new breed of economists emphasized psychological and behavioural elements of stock-price determination, and they came to believe that future stock prices are somewhat predictable on the basis of past stock price patterns as well as certain "fundamental" valuation metrics (Malkiel B. , 2003). The Efficient Market Hypothesis is considered as the backbone of contemporary financial theory and has been the dominant investing theory for more than 30 years (from the early

60s to the mid 90s). Needless to say, a generation ago, it was the most widely accepted approach by academic financial economists. (Malkiel, 2003)

## 2.6 Emergence of Behavioural Finance:

Behavioural finance is a respectively new field that aims to join behavioural and cognitive psychological theory with conventional economics and finance to provide explanations for why people make suboptimal financial decisions. Economists have been considering financial behaviours for centuries, but behavioural economics formally began when Pioneers, Daniel Kahneman and Amos Tversky, published a 1979 paper on prospect theory and the way individuals approach economic risk. In 1980, Richard Thaler developed Kahneman and Tversky's work by authoring "Toward a Positive Theory of Consumer Choice". Thaler has become one of the most famous theorists in the field, authoring books like *Nudge: The Gentle Power of Choice, Architecture Quasi-Rational Economics, The Winner's Curse: Paradoxes and Anomalies of Economic Life* and *Advances in Behavioural Finance Volumes I and II*. After that, "Kahneman and Tversky" won a Nobel Memorial Prize in Economics in 2002. (Kahneman wrote the best-selling *Thinking, Fast and Slow in 2011*. In addition, University of California finance professors Brad M. Barber and Terrance Odean explain in their article on "The Courage of Misguided Convictions," behavioural finance incorporates "observable, systematic, and very human departures into standard models of financial markets." Before proceeding any further, it is necessary to define ***behavioural finance.***

### 2.6.1 Definitions of Behavioural Finance:

"**It *studies how people actually behave in a financial setting. Specifically, it is the study of how psychology affects financial decisions, corporations, and the financial markets.*"(**Nofsinger, 2001)

According to Sewell (2007), *"**Behavioural finance is the study of the influence of psychology on the behaviour of financial practitioners and the subsequent effect on markets."*** The science deals with theories and experiments focused on what happens when investors make decisions based on hunches or emotions.

Shefrin (2000) defines Behavioural finance as "a rapidly growing area that deals with the influence of psychology on the behaviour of financial practitioners".

Behavioural theorists focus on the exception cases that take place in decision making process and which are caused by factors like uncertainty and emotional confusion. Hence, they talk about anomalies and bubbles that take place in the financial market. It studies the psychological biases and mental shortcuts used by individuals to make investment decisions. As a single example of hundred ones that studied these anomalies in the world and the Arab region, the study of Abu-Rub and Sharba (2010) documented the calendar effects on investment decision making in (PEX) and the anomalies that took place in stock prices before and after holidays.

This thesis focuses on studying the impact of behavioural factors, as described by Kahneman and Tversky in their work in regard to prospect theory and heuristics theory and their effect on investment decision making. Consequently, the following section will deal with the definitions and nature of these behavioural biases.

### 2.6.3 Prospect theory:

Prospect theory was developed by Kahneman and Tversky (1979). In its basic form, it is interested in the behaviour of decision makers who have to make a choice between two alternatives. The definition in the original text is: "**Decision making under risk can be viewed as a choice between prospects or gambles.".** Decisions liable to risk signify a choice between alternative actions, which are associated with particular probabilities (prospects) or gambles. Later, the model was modified and elaborated. Goldberg and von Nitzsch (2001, p. 62) mentioned that Prospect theory has probably done more to bring psychology into the heart of economic analysis than any other approach. Many economists still utilize the expected utility theory paradigm when approaching problems; however, prospect theory has gained much fame in recent years, and now certainly occupies an essential place on the research agenda for even some prominent economists. Contrary to much psychology, prospect theory has a solid mathematical basis — making it comfortable for economists to deal with. However, unlike expected utility theory which concerns itself with how decisions under uncertainty should be made (a prescriptive approach), prospect theory concerns itself with how decisions are actually made (a descriptive approach). Montier (2002, p. 20). Kahneman and Tversky started their research investigating apparent anomalies and contradictions in human behaviour. Subjects when offered a choice depicted in one way might display risk-aversion but when offered the same choice put in a different way might show risk-seeking behaviour. For example, as Kahneman says, ***people may drive across town to save $5 on a $15 calculator but not drive across town to save $5 on a $125 coat.*** One very essential result of Kahneman and Tversky work is proving that

people's attitudes toward risks related to gains may be completely different from their attitudes toward risks concerning losses. For example, when given a choice between getting $1000 with certainty or having a 50% chance of getting $2500 they may choose the certain $1000 in preference to the uncertain chance of getting $2500 even though the mathematical outcome of the uncertain choice is $1250. This is a perfectly reasonable attitude that is described as risk-aversion. But Kahneman and Tversky found that the same people when faced with a certain loss of $1000 versus a 50% chance of no loss or a $2500 loss do often choose the risky alternative. This is called risk-seeking behaviour. This is not necessarily irrational but it is essential for analysts to recognize the asymmetry of human choices. Kahneman and Tversky (1979).Kahneman and Tversky have replaced the subjective utility theory with a value function that assigns a value to a payoff. Contradictory to the predictions of expected utility theory, the magnitude of negative and positive payoffs is not the same — the negative portion of the slope is steeper than the positive portion, so the absolute value of a loss is greater than the absolute value of an equivalent win. This is where prospect theory gets its name: the investor sees each gamble as a prospect for change from his current position. In the case of a guaranteed 300 versus a 50 percent chance of winning 1,000 and a 50 percent chance of losing 400, expected utility theory would say that the lotteries are equal because they both have an expected outcome of 300. Under prospect theory, the probable loss of 400 might outweigh the potential gain of 1,000, thus the investor could strongly prefer the certain 300. Shiller, 2013

To sum up, prospect theory describes the behaviour of people who accept gambles when they are less than their levels of aspiration but refuse such gambles when they are above their levels of aspirations.

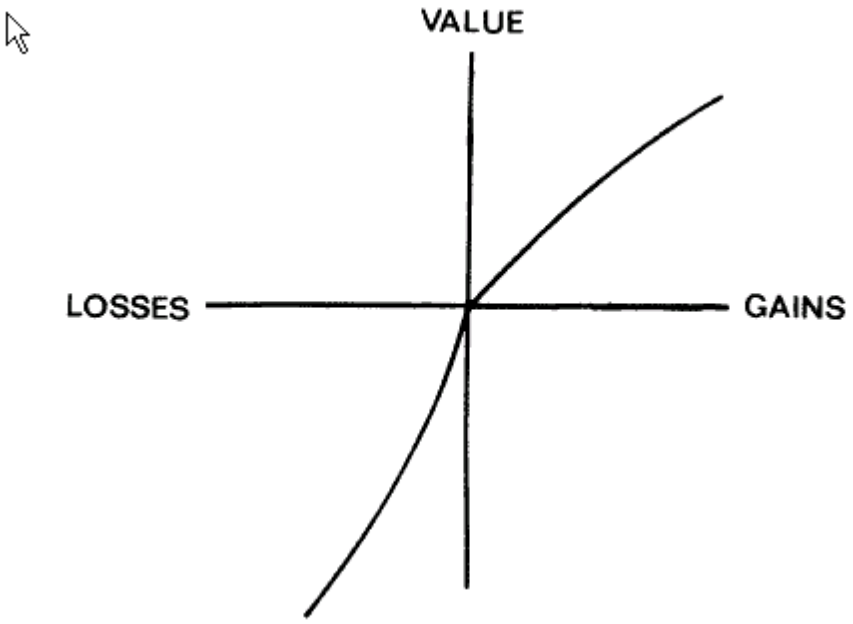


**Figure 1.١ :A Hypothetical Value Function**

Source: Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2 (March 1979): 279

Another great change made to the financial scene was the introduction of the weighting function that describes how people treat probabilities. According to expected utility theory, agents multiply the payoff by the exact probability of its occurrence. Prospect theory recognizes that people have an imperfect understanding of the meaning of probabilities. The weighting function describes the probability that investors use in their calculations, or the decision weight, for each level of stated probability. The decision weight tends to be

lower than the stated probability except at the ends of the function: agents treat probabilities that are close to zero as zero, treat small probabilities as larger than they really are and treat probabilities close to 100 percent as certainties. Consequently, investors commit many errors and they are liable to biases when taking investment decisions.

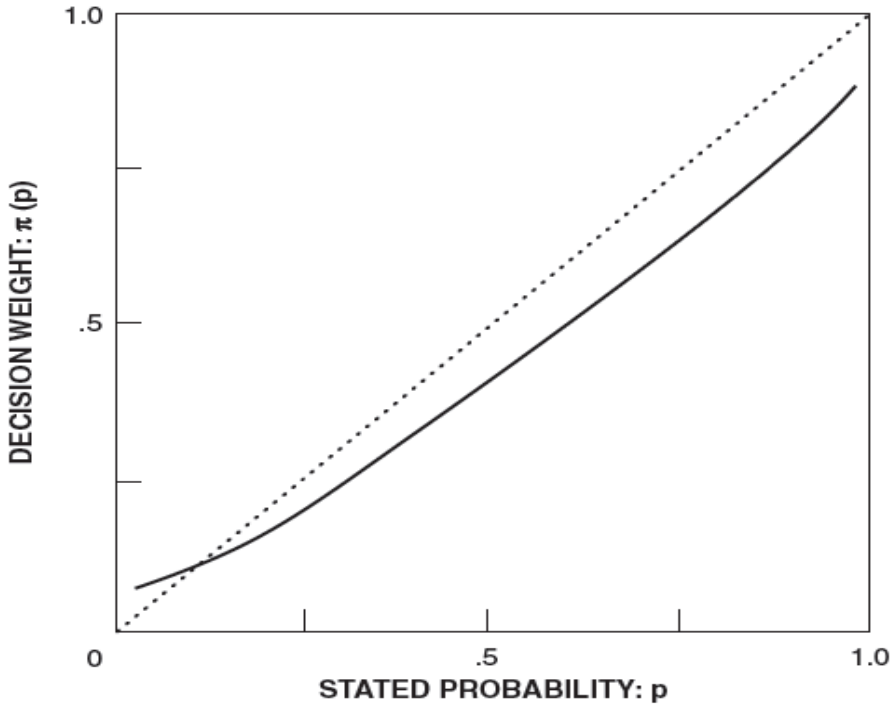


**Figure٢ 2: Hypothetical Weighting Function**

To stand on a concrete ground, it is essential to briefly mention the main biases included in the prospect theory as developed by Kahneman and Tversky (1979):

### *2.6.3.1 Loss aversion:*

In respect to prospect theory, loss aversion means that people prefer to avoid losses than acquire gains. The theory was first introduced and postulated in 1979 by Kahneman

and Tversky under the assumption that losses have a larger impact on preferences than that of the advantages of gains. Some studies assume that losses are as much as twice as psychologically strong as gains. Loss aversion is based on the idea that the mental penalty related to a given loss is greater than the mental reward from a gain of the same size. If individual investors are loss averse, they may be unwilling to realize losses and may even take increasing risks to avoid a losing outcome. This provides a viable explanation for 'averaging down' investment tactics, whereby investors increase their exposure to a falling stock, in an attempt to recoup prior losses. Shefrin (2001) terms this phenomenon "escalation bias".

#### *2.6.3.2 Regret aversion:*

Regret aversion shows up when investors have the desire to avoid experiencing the pain of regret resulting from a poor [investment] decision. It exemplifies more than just the pain of financial loss, and includes the regret of feeling responsible for the decision, that gave rise to the loss. Regret aversion can stimulate investors to persist on holding poorly performing shares. The hope to avoid regret can also potentially bias new investment decisions. Investors may tend to avoid companies and sectors which have performed poorly in recent times, in expectation of the regret they would feel if they made the investment and subsequently lost money. Regret aversion could encourage 'herd behaviour' on the part of investors, for example, to invest in 'respected' or 'hot' companies as these investments carry implicit 'insurance' against regret (if you lose money, so will a lot of other people, and therefore you won't feel as bad about it. Singh, 2012

### *2.6.3.3 Mental Accounting:*

Mental accounting suggests that people prefers to separate their money into separate accounts based on various subjective criteria, like the source of the money and intent for each account. In accordance of the theory, individuals assign different functions to each asset group, which has an often irrational and detrimental effect on their consumption, investment decisions and other financial behaviours. Many people use mental accounting, although they may not realize how illogical this line of thinking really is. For instance, people often have a special "money jar" or fund set aside for a project, a vacation, son education or a new home, while still carrying a huge credit card debt. The mental accounting bias also rises into investing. For instance, some investors distribute their financial investments between a safe investment portfolio and a risky portfolio to prevent the negative outcomes that risky investments may have from affecting the entire portfolio. The problem with such a practice is that despite all the work and money that the investor spends to separate the portfolio, his net wealth will be no different than if he had held one larger portfolio. This can lead to inefficient decision-making, for example, an individual may borrow at a high interest rate to purchase a consumer item, while simultaneously saving at lower interest rates for a child's college fund. The use of mental accounts could be partly explained as a self-control device. Singh, 2012

### *2.6.3.4 Self control:*

Simply put, self-control bias is a human behavioural tendency that causes us to consume today at the expense of saving for tomorrow. Money is an area in which people are notorious for displaying a lack of self-control. (Pompian, 2006)

## 2.7 Heuristics theory:

Heuristics comes from the ancient Greek work *ευρίσκω* (= discover) and refers to gaining knowledge or a favourable result by employing smart guessing rather than determined formulas. Heuristics involve simple experience-based techniques for problem solving, known as rules-of-thumb or shortcuts, which have been introduced to explain how investors make decisions, especially during periods when, because of poor information, complex investing circumstances and market instability, it is difficult to make decisions. Mental heuristics work by a mechanism called attribute substitution which takes place without conscious awareness (Kahneman & Frederick, 2002. Similarly speaking, People often use rules-of-thumb or heuristics to make their decisions and judgments. Some of these judgmental heuristics rest on metacognitions, people's contemplations about their own thinking. Underpinning each metacognitive heuristic is an assumption that there is a strong relationship between the way a person thinks about an event and the natural manner in which that event occurs (Yates, 1990). The heuristics to be defined in the following lines were included in Kahneman and Tversky's work (1979).

### 2.7.1 Representativeness:

The definition of representativeness is explained by Tversky and Kahneman as quoted:

**"When judging the probability of an event by representativeness, one compares the essential features of the event to those of the structure from which it originates. In this manner, one estimates probability by assessing similarity or connotative distance"** (Tversky and Kahneman, 1973). That is to say, representativeness is a process of overreliance on stereotypes. Similarly speaking, it is a decision making rule of thumb that

people use to judge the similarity of something by how well it looks like a particular prototype. It makes people ignore useful information. Here's an example from (Meyers, 1994): ***Consider Linda, who is 31, single, outspoken, and very bright. She majored in philosophy in college. As a student she was deeply concerned with discrimination and other social issues, and she participated in antinuclear demonstrations. Based on this description, which you would say, is more likely: (a) Linda is a bank teller or (b) Linda is a bank teller and active in the feminist movement. Most people answer (b) because it matches their impression of Linda. But this is an error because it is not possible for the conjunction of two events to be more likely than one of the events alone. So (b) can never be more likely than (a).***

### 2.7.2 Availability:

Availability is a cognitive shortcut in which a decision maker relies on knowledge which is readily available rather than search for other options and alternatives."There are times in which people evaluate the frequency of a class or the probability of an event by the ease with which examples or occurrences can be retrieved or brought to mind. For instance, one may evaluate the risk of heart attack among middle-aged people by recalling such occurrences among one's relatives and acquaintances. Availability is a useful key for assessing frequency or probability, since instances of large classes are often recalled better and faster than instances of less frequent classes. However, availability is affected by factors other than frequency and probability. Hence, the reliance on availability leads to predictable biases, [...]" Tversky and Kahneman (1974). From a psychological viewpoint, availability heuristic is a cognitive rule of thumb that rests on current instances that pop up to mind. When a person is trying to make a decision, a group of connected events or

situations might immediately come to the forefront of his\her thoughts. Consequently, a person might judge that those events are more frequent and possible than others. You give greater credit to this information and tend to overestimate the probability and likelihood of similar things taking place in the future. (Cherry, 2013)

### 2.7.3 Overconfidence:

It is a mental shortcut that affects an individual's risk perception because there are many methods in which a person tends to be overconfident about his/her decision related to risk-taking behaviour. According to Daniel and Titman (2000), overconfidence is one of the most documented biases in the behavioural finance literature. Confidence can be described as the "belief in oneself and one's abilities with full conviction" whereas " overconfidence can be taken a step further in which overconfidence takes this self-reliant behaviour to an extreme" (Ricciardi and Simon,2000a,p.13). Baruch Fischhoff and his colleagues (1977) documented the same overconfidence phenomenon when people rate their certainty about their answers to multiple-choice questions, such as: "Which is longer (a0 the Panama Canal, or (b) the Suez Canal?" If people 60 percent of the time answer such a question correctly they will typically feel about 75 percent sure.

There are two main implications of investor overconfidence. The first is that investors take bad bets because they fail to realize that they are at an informational disadvantage. The second is that they trade more frequently than is prudent, which leads to excessive trading volume" Shefrin (2000). Overconfidence, however generated, appears to be a fundamental factor promoting the high volume of trade we observe in speculative markets. Without such overconfidence, one would think that there would be little trading in financial markets." Shiller (2000).

### 2.7.4 Gambler's Fallacy:

When an individual erroneously believes that the onset of a certain random event is less likely to happen following an event or a series of events. This line of thinking is incorrect because past events do not change the probability that certain events will occur in the future. Suppose you have flipped a coin and it has come up heads several straight times. The gambler's fallacy is the notion that tails is more likely to occur on the next toss. The chances of heads or tails are 50/50 on every throw. Each toss is completely independent of the other tosses. Gamblers often base their theories on the incorrect assumption that something is "bound to happen".

### 2.7.5 Price anchoring:

Anchoring is used to clarify the strong tendency we all have to cling to a belief that may or may not be truthful, and use it as a reference point for future upcoming decisions according to Ricciardi and Simon (2001).the process of anchoring in the decision making process is used by an individual to solve complex problems by choosing an initial reference point and slowly adjusting to reach a final decision. For example," one of the most famous anchors is a past incident or event.

In a 1974 paper entitled "Judgment under Uncertainty: Heuristics and Biases", Kahneman and Tversky conducted a study in which a wheel containing the numbers 1 through 100 was spun. After that, subjects were asked if the percentage of U.N. membership accounted for by African countries was higher or lower than the number on the wheel. Afterward, the subjects were asked to give an actual estimate. Tversky and Kahneman found that the

seemingly random anchoring value of the number on which the wheel landed had an enormous effect on the answer that the subjects gave. For example, when the wheel landed on 10, the average estimate given by the subjects was 25%, whereas when the wheel landed on 60, the average estimate was 45%. As you can see, the random number had an anchoring effect on the subjects' responses, pulling their estimates closer to the number they were just shown - even though the number had absolutely no correlation at all to the question.

Anchoring may also be a source of frustration in the financial world, because investors build their decisions on unrelated figures and statistics. For example, some investors invest in the stocks of companies that have fallen substantially in a very short period of time. In this instance, the investor is referring to a recent "high" that the stock has reached and therefore believes that the drop in price gives an opportunity to buy the stock at a discount. Although, it is true that the fickleness of the overall market can cause some stocks to drop considerably in value, permitting investors to take advantage of this short-term volatility. However, stocks quite often also fall in value due to changes in their underlying essentials. .

After shedding some light on the general framework of the research, it is time to turn to take a glance on Palestine Stock Exchange.

## 2.8 Palestine stock exchange

Palestine Exchange (PSE) was established in 1995 to promote investment in Palestine. The PSE was fully automated upon establishment- a first amongst the Arab Stock Exchanges. The PSE became a public shareholding company in February 2010 responding to principles of transparency and good governance. The PSE operates under the supervision of the Palestinian Capital Market Authority.

The PSE strives to provide an enabling environment for trading that is characterized by equity, transparency and competence, serving and maintaining the interest of investors. The PSE is very appealing in terms of market capitalization; it is financially sound, and well capitalized to maintain a steady business in a volatile world, as it passed with the minimum level of impact of the global financial crisis compared to other MENA Exchanges.

There are 48 listed companies on PSE as of 31/03/2013 with market capitalization of about $ 3 billion across five main economic sectors; banking and financial services, insurance, investments, industry, and services. Most of the listed companies are profitable and trade in Jordanian Dinar, while others trade in US Dollars. Only stocks are currently traded on PSE, but there is potential and readiness to trade other securities in the future.

In 2009, the PSE ranked thirty third amongst the worldwide security markets, and regionally comes in second in terms of investor protection.

### 2.8.1 PSE Vision

We seek to be a model for Arab and regional financial markets, through providing innovative services, proposing ideal investment opportunities in securities, attracting investments, the use of state of the art technology, compliance to the rules of corporate governance and establishing constructive relations with Arab, regional and global markets.

### 2.8.2 PSE Mission

To provide a fair, transparent and efficient market for trading securities that serves investors, protects their interests, contributes to creating an enabling environment that attracts local and foreign investments, and interacts with local and Arab relevant

institutions in a manner that serves the national economy and enhances the culture of investment in financial markets.

### 2.8.3 PSE Objectives

- To provide a safe and enabling trading environment characterized by efficiency, fairness and transparency.
- To increase the investment awareness of the local community and enhance PSE relations with local, Arab and international economic institutions and forums.
- To develop domestic investments and attract Palestinian Diaspora & foreign capital.
- To increase the depth of the exchange by continuously listing new companies and providing new and diverse financial tools and services.
- To create a proficient working environment within the PSE by investing in human capital and maintaining an up-to-date technologies of stock markets.

### 2.8.4 There are many reasons to invest in the Palestine Exchange:

1. Small yet robust.
2. Great spring back potential.
3. Tried & tested.
4. Undervalued stocks.
5. Evolving and efficient regulatory environment within international best practice.
6. No restrictions on foreign investment or taxation of capital gains, no foreign exchange restrictions.

### 2.8.5 PSE Regulatory Framework

In 2005, with the development of the legal structure of the securities sector in Palestine, particularly the issuance of the Securities Law No. (12) of 2004 and the Capital Market Authority Law No. (13) of 2004, the Palestine Capital Market Authority (CMA) took over the responsibility of supervising the PSE and issuing securities by the public shareholding companies.

The PSE operates in accordance with the Securities Law No. (12) of 2004, and the bylaws that stemmed from it in a manner that does not contravene with the CMA directives.

The PSE works also in accordance with modern regulations, which form a strong basis to ensure a fair trading environment. These regulations include: listing regulation, trading regulation, disclosure regulation, membership regulation, dispute resolution regulation and the regulation of professional conduct.

It is time now to turn to chapter 3, the literature review, in order to display previous work related to this work and the benefits maintained from others efforts.

# Chapter Three: Literature Review

- **Introduction**
- **Previous studies**
- **Comments**

## 3.1 Introduction:

This chapter aims at reviewing the previous studies related to the subject matter of the research .the previous studies will be organized on a chronological basis from the oldest to the newest. As is the case with any review paper, we will miss many papers and topics that some deem relevant. We are human, and all humans err. As is the case for individual investors, so is the case for those who study them.

## 3.2 Previous studies:

**Barberis and Huang (2001):" Mental Accounting, Loss Aversion, and Individual Stock Returns"**

The researchers study equilibrium-level stock returns in two economies: one in which investors are loss averse over the fluctuations of their stock portfolio and another in which they are loss averse over the fluctuations of individual stocks that they own. research results were obtained via using and designing a mathematical model to test the hypotheses. The conclusions of the research are:

- In equilibrium, under mental accounting, individual stock returns have a high mean, are more volatile than their underlying cash flows and are slightly predictable in the time series.
- The investor's system of mental accounting affects asset prices in a significant way.

Massa, Massimo and Simonov, Andrei (2002):" Behavioural Biases and Investment**"**

The aim of the research is to investigate the way investors react to prior gains/losses and the so called" familiarity" bias by using a new and unique dataset. The methodology followed in the research is done by inspecting investor reactions to different definitions of gains and losses (i.e., overall wealth, financial gains and losses and real estate gains and losses). The researchers also investigated the issue of narrow framing and mental accounting by considering how gains and losses in a category of wealth (e.g., real estate) affects changes in holdings in other categories (e.g., financial assets).the conclusions of the research are:

- The research provided evidence that shows that investors react to prior gains/losses according to what postulated by the house-money effect. That is, previous gains increase investor risk taking, while previous losses reduced reduce it.
- In terms of individual stock picking we provided evidence in favour of the information based familiarity hypothesis and showed that investor stock choice is mostly driven by the availability of information.
- Familiarity can be considered more as a proxy for the availability of information than a behavioural heuristics.

**Barber and Odean (2005),"Individual investors"**

This study has a two fold aim of examining the disposition effect on individual investor's behaviour and the effect of overconfidence manifested in overtrading. The

research provides an overview of research on the stock trading behaviour of individual investors. The research conclusions are:

- There is compelling evidence that investors tend to sell their winning investments and to hold on to their losers.
- It is not yet clear what contribution behavioural finance will make to asset pricing theory.
- Traditional models of financial markets give us very little insight into why people trade as much as they do.

**Chun, Wong and Ming, Lai (2007): "Investor Behaviour and Decision-Making Style: A Malaysian perspective"**

The study examines the common underlying investor behaviour of Malaysian Stock market investors. The study uses a structural questionnaire. Data were collected from 290 market investors from April to June 2007. The survey concludes the following points:

- The psychological factors underlying the decision-making in Malaysian Stock Market investors existed.
- Because the investment Knowledge and skills were low, decisions were more likely to be influenced by behavioural biases.
- Some investors were overly confident of their personal ability to trade stocks.

**Dargham, Nathalie, (2007): "The implications of Behavioural** Finance."

The paper aims at providing a synthesis of the behavioural finance literature over the past two decades in order to answer the question: What can we learn from behavioural finance? To address this question, the paper reviews in the first section the efficient market hypothesis theory and then explains the prospect theory. In the second section, the researcher presents the various psychological and sociological principles that constitute the basis of the behavioural finance. The paper is a narrative one and it surveys the developments occurred in the field of finance beginning with Efficient Market Hypothesis and ending with Behavioural finance and it concludes the following:

- Actual financial markets tend to deviate from the traditional financial hypotheses, i.e. Efficient Market Hypothesis.
- Behavioural finance has contributed to our better understanding of investors' behaviour in financial markets.
- Financial hypotheses and theories have helped investors to make better investment decisions in the actual financial markets.

**Shefrin, Hersh, (2007): "Behavioural Finance: Biases, Mean-Variance Returns, and Risk Premiums."**

The aims of the paper are to discuss some of the behavioural phenomena and how they connect to particular issues related to analyst perceptions about return and to compare returns for what is called behavioural mean-variance portfolios with those of traditional mean-variance efficient portfolios. The research reached the following conclusions:

- Many investors make judgements that are based on some assumptions that mistakenly assume that risk and return are negatively related.
- The assumptions underlying analysts' target prices assume that risk and return are positively related.
- Behavioural mean-variance portfolios exemplify investor errors and feature negatively skewed return patterns.

**Bhandari and Hassanein and Deaves, (2008):" Debiasing Investors with Decision Support Systems: An Experimental Investigation."**

This research aims at presenting evidence that decision support systems can play an important role in debasing behaviourally-challenged investors. An empirical study involving 119 subjects provides strong evidence for the existence of cognitive biases in investment decision making and demonstrates the effectiveness of decision aids in lowering the negative impact of such biases on the ability of investors to make sound investment decisions. Additionally, such decision aids are shown to be more valuable in environments where bias is most likely to be present. The conclusions of the research are:

- This study has demonstrated that individuals, even in simple investment decision-making tasks are adversely influenced by such cognitive biases as framing, representativeness and ambiguity.
- The study found that decision aids such as feedback and graphs can significantly mitigate the impact of such biases.
- The study concluded that decision aids such as feedback and graphs can lower the impact of investment related cognitive biases and they are more valuable in environments where the bias level is likely to be higher.

Chen and Kim and Nofsinger, (2008): "Trading Performance, Disposition Effect, Overconfidence, Representativeness Bias, and Experience of Emerging Market Investors,"

Using brokerage account data from China, the study aims at examining investment decision making in an emerging market. The study used brokerage account data from China and four empirical tests to examine the investment decision making:

a) Investor characteristics and trading performance.
b) Investor characteristics and the disposition effect.
c) Investor characteristics and overconfidence.
d) Investor characteristics and the recent past performance of stocks purchased. the research was concluded as follows:

- The study finds that Chinese investors make poor trading decisions: the stocks they purchase underperform those they sell.
- Chinese investors suffer from three behavioural biases: (i) they tend to sell stocks that have appreciated in price, but not those that have depreciated in price, consistent with a disposition effect, acknowledging gains but not losses; (ii) they seem overconfident; and (iii) they appear to believe that past returns are indicative of future returns (a representativeness bias).
- Chinese investors seem more overconfident than U.S. investors (i.e., the Chinese hold fewer stocks, yet trade very often) and their disposition effect appears stronger.

**Ghandra, Abhiee (2008): "Decision-Making In The Stock Market: Incorporating Psychology with Finance."**

The purpose of the paper is to explore the impact of behavioural factors and investors' psychology on their decision-making and to examine the relationship between investors' attitude towards risk and behavioural decision-making.The research was based on the secondary data and concluded that:

- Contrary to classical finance theory suggestions, individual investors do not always act rationally while making investment decisions.
- Individual investors practice psychological and emotional biases which play an essential role in an investor's decision-making process.
- The individual investors are the most susceptible to behavioural anomalies and mental errors.
- The investment decision making is influenced largely, by behavioural factors like greed and fear, cognitive dissonance, heuristics, mental accounting, and anchoring.

**Nik, Maheran et.al (2008): "Study on Behavioural Finance: Is the Individual Investors Rational?**

The article aims at offering a brief survey of prior research and theory on behavioural finance and look at the behaviour of the investors, their psychology and their investing style.

- There is substantial evidence that psychological biases affect market price.

- Due to the mispricing, there is a substantial misallocation of resources in the economy. Therefore, there is some suggestion to the economists to study how regulatory and legal policies can limit the damage done by imperfect rationality.
- Government should take proper actions to help investors make better choices and make the market more efficient by making several modifications to regulations, investment education and perhaps standardizing mutual fund advertizing.

**Bernéus, Hannes, Sandberg, Carl, Wahlbeck, David (2008) "behavioural finance: investors' rationality"**

The purpose of this thesis is to examine if professional investors are indicating tendencies of irrational behaviour when exposed to certain psychological dilemmas related to the financial world. A quantitative method has been used and a survey has been conducted. The results of the survey show that *Anchoring* and *Gambler's fallacy* both indicated strong biases, compared to overconfidence that indicated low tendencies.

**Chira, Inga et.al (2008) "Behavioural Bias within the Decision Making Process"**

This paper investigates the cognitive biases and heuristics to which business students are subject. This paper evaluates the existence and extent of a number of psychological phenomena that fall under the three categories. Specifically, it will analyze: excessive optimism and overconfidence, loss aversion, the influence of sunk cost on the decision making process, and the concept of familiarity. In addition, illusion of control and confirmation biases will be presented. This was achieved by administering a questionnaire and collecting empirical evidence about both undergraduate and graduate business students'

own perceptions of bias. The psychological phenomenon known as bias and its presence in human decision making, both financial and non-financial, will provide additional insight on the subject of investor irrationality and broaden the ideals of rationality assumed in classical financial theory. the conclusions were: the research focused on overconfidence and excessive optimism, loss aversion, familiarity, and sunk cost fallacy, as well as an initial overview of illusion of control and confirmation bias. Research is based on only one questionnaire and was administered to a limited number of students, so any statistical inferences drawn may be spurious.

**Seppälä, Antti (2009):" Behavioural Biases of Investment Advisors: The Effect of Overconfidence and Hindsight Bias"**

The objective of this thesis is to examine the effects of three behavioural biases on investment advisors. These biases are hindsight bias, overconfidence and self-attribution bias. A survey study is carried out to find out how the studied biases affect the investment advisors. Conclusions of the study were as follows:

- The results on hindsight bias suggest that all people, including investment advisors, suffer from it. People tend to perceive their initial performance better than it actually is, after learning the outcome
- The tests of this study show that people tend to overestimate their initial capability to choose the better performing asset from two alternatives or estimate the return of an asset, after learning the realization.

- Thus expertise is interpreted to reduce hindsight bias. However, investment advisors have the strongest tendency to exaggerate their initial ability to predict asset returns, after learning the realization. The exaggeration reinforces with experience.
- People with more expertise are less confident compared to their true capabilities.
- Professionals outperform other people with lower level of confidence, which indicates lower overconfidence.
- People who believe they have been successful in a task on initial round increase their confidence to the second round.
- Opposite to the hypothesis that expertise reduces behavioural biases, investment advisors are the most exposed to self-attribution bias.

**Gervais, Simon (2009): "Behavioural Finance: Capital Budgeting and Other Investment Decisions.**

The survey explores the literature that handled the effects of behavioural biases on capital budgeting. It is a descriptive research that depends on surveying the literature in order to study the effects of behavioural biases on capital budgeting. The study concluded that:

- People tend to be overconfident and overestimate the precision of their information and their ability to control risk. In addition to the fact that, firm managers are especially susceptible to such bias.
- Learning and contractual incentives can reduce the investment inefficiencies that result from manager's overconfidence, but do not seem sufficient to eliminate them.

Deeper research and exploration is needed to study the interaction between contractual incentives, overconfidence, and investment policy.

**Bailey, Warren and Kumar, Alok and Ng, David (2010) : "Behavioural Biases of Mutual Fund Investors"**

The study examines the effect of behavioural biases on the mutual fund choices of a large sample of U.S. discount brokerage investors using new measures of attention to news, tax awareness, and fund-level familiarity bias, in addition to behavioural and demographic characteristics of earlier studies. The researchers used documenting the importance of behavioural factors in the delegated management setting of mutual funds besides applying factor analysis to the individual behavioural bias measures and other characteristics identifies several investor stereotypes that the study relates to mutual fund trading and performance. The study concludes the following points:

- Behavioural factors influence the decisions of individual investors to hold individual stocks as opposed to mutual funds, including passive index funds.
- Investors with higher income, relatively higher educational level, and greater investment experience are more likely to use mutual funds and benefit from their choices.
- Investors with strong behavioural biases tend to gravitate towards individual stocks and avoid low expense index funds. When they do invest in mutual funds, they tend to select high expense funds, trade funds frequently, avoid index funds, and time their buys and sells poorly, thereby damaging their portfolio's performance. Investors who score high on behavioural biases tend to invest in funds with higher expense ratios and loads. They experience poor investment performance as a result.

**Park, JaeHong et. al (2010):" Confirmation Bias, Overconfidence, and Investment Performance: Evidence from Stock Message Boards"**

Using data from a new field experiment in South Korea, the study examines how information from virtual communities such as stock message boards influences investors' trading decisions and investment performance. An analysis of 502 investor responses from the largest message board operator in South Korea was used to support the study hypotheses. Findings of the research were:

- We find that investors exhibit confirmation bias when they process information from message boards.
- We also demonstrate that investors with stronger confirmation bias exhibit greater overconfidence.

**Yahyazadehfar, Mahmood et.al (2010):" The Influence of Investor Psychology on Regret Aversion"**

This paper looks at a bias that can affect investors which is regret aversion and examines the influences of four psychological factors include disposition effect, Herding Behaviour, cognitive dissonance and Conservatism the investors regret aversion. Survey by questionnaires is conducted and five-point scales are anchored from strongly disagree to strongly agree. The scales are combined from several other relevant studies, such as Shefrin and Statman (1985), with new items to make an initial list of questions. Data is collected from Tehran Stock Exchange. 60 investors were asked to complete the questionnaires. 48 of the 60 retuned questionnaires are usable. Eighty four percent of all the respondents are male and 16% are female. The research found that:

- Investor psychology tends to feel sorrow and grief after having made an error in judgments.
- Investors decision whether to sell a security are typically emotionally affected by whether the security was bought for more or less than the current price.
- The disposition effect implies that investors, in trying to avoid regret, will have a greater tendency to sell winners than losers.
- Investor must try to practice some mechanisms to control his (her) irrational behaviour.

**Luong, Le and Ha, Doan (2011): "Behavioural Factors Influencing Individual Investors' Decision Making and Performance: a survey at The Ho CHI Mini Stock Exchange. "**

The main objectives of this research are:

- To apply the behavioural finance to identify the possible behavioural factors influencing the investment decisions of individual investors at the HOSE.
- To identify the impact levels of behavioural factors on the investment decisions and performance of individual investors at the HOSE.
- To give some recommendations for individual investors to adjust their behaviour to achieve good investment results.
- To set the backgrounds for the further researches in behavioural finance in Vietnam.

Hypotheses are tested through the questionnaires distributed to individual investors at the Ho Chi Minh Stock Exchange. The collected data are analyzed by using SPSS and AMOS software's. The research concluded that:

- There are five behavioural factors that impact the investment decisions of individual investors at The Ho CHI Mini Stock Exchange: Herding, Market Prospect, Overconfidence, Gambler's fallacy and anchoring.
- Only three factors are found to influence the Investment performance: Herding, Prospect and Heuristic.

Further Researches are suggested to apply behavioural finance to explore the behaviours influencing the decisions of institutional investors at the Stock Exchange of Vietnam.

**Mahmood Iqbal, et.al (2011): "Behavioural Implications of investors for Investment in the Stock Market."**

The research aims at examining the role of various socioeconomic, demographic an attitudinal factors affecting the investment decision of investors in the market." The research concluded that:

- The researcher developed a risk perception centered model and various socioeconomic and attitudinal variables have been incorporated in the model. The impact of these variables on the dependent variables of reinvestment intentions and return expectations can be tested.
- It is necessary that the investment professionals take these factors into consideration when designing portfolio of their clients.

**Ahmed, Naveed et.al (2011): "Behavioural Finance: Shaping the Decisions of small Investors of Lahore Stock Exchange."**

The paper aims at investigating the behaviour of investors in the stock market by looking into the decision making process of the small investors in Lahore Stock Exchange. Survey methodology was used to collect the data from the small investors of Lahore Stock Exchange. A total of 300 questionnaires were distributed out of which 147 generated valid responses yielding a response rate of 49% which is quite satisfactory. The sample was drawn randomly and Questionnaire was partially adopted from (Sevil, Sen and Yalama, 2007). Simple descriptive are used to analyze the data using software SPSS 16.0. Findings were:

- Small investors in Lahore Stock Exchange seem to be irrational and have different psychological biases like loss aversion, regret aversion and heuristics.
- The behavioural aspect of the human nature could not be avoided while providing the explanations with regard to stock market functioning and volatility as human are the participants and drives if these markets. The paper calls for more research in the field so that alternative models could be advised and better understanding of the stock market mechanisms and functioning can be reached.

**Ghandra, Abhijeet and Kumar, Ravinder (2011): "Determinants of Individual Investor Behaviour: An Orthogonal Linear Transformation Approach."**

The paper considers the theory of irrationality of individual investors and investigates into their behaviour regarding their investment decisions. The paper investigates whether some psychological and contextual factors affect individual investor

behaviour. The paper reveals the five underlying psychological axes that appear driving the individual investor behaviour. The five axes are called as prudence and precautious attitude, conservatism, under confidence, informational asymmetry and financial addiction.

**Gunay, Suleyman and Demirel, Engin (2011): "Interaction between Demographic and Financial Behaviour Factors in Terms of Investment Decision Making"**

The purpose of this study is to show that there is an interaction between demographic and financial behaviour factors (overreaction, herding, cognitive bias, irrational thinking, and overconfidence) in investment decisions.

The study is conducted in Edirne city, Turkey. A questionnaire is developed and seventeen questions are asked to the respondents based on these eighteen hypotheses. Three of these questions are about demographic factors and fourteen of these questions are about financial behaviour factors. The questionnaire is distributed to 397 respondents and conclusions driven were:

- Gender is an important factor in financial behaviour. It is found that male respondents have tendency to show more financial behaviour than female respondents in their investment decisions.
- Gender has an interaction with five of the financial behaviour factors (overreaction, herding, cognitive bias, irrational thinking, and overconfidence).
- The level of individual savings has an interaction with four of the financial behaviour factors (overreaction, herding, cognitive bias, and irrational thinking).

- There is no interaction between age and six financial behaviour factors (overreaction, herding, cognitive bias, irrational thinking, overconfidence and media effect).

**Huei-Wen Lin,(2011) : "Elucidating rational investment decisions and behavioural biases: Evidence from the Taiwanese stock market"**

This study examines how rational decision making and behavioural biases are related, as well compares the relative differences of three behavioural biases, that is, disposition effect, herding and overconfidence, by various demographic variables. The psychological cognition of investment decision making among investors and the antecedences of behavioural biases are also studied. A sampling survey of 430 valid respondents from voluntary individual investors in Taiwan was used to examine how rational decision making and behavioural biases are related. The results further demonstrate that male and female investors significantly differ in disposition effect, herding and tendency of overconfidence.

**Evans, Anthony et.al (2011): "Trust and self-control: The moderating role of the default"**

The present research explores the determinants of deliberative trust, investigating how trust decisions are affected by the availability of cognitive resources. The research test the interaction of two relevant factors: self-control (the ability to exert mental control over one's behaviour) and the default response (a preselected option that requires minimal or no effort). The study uses the experimental approach. So students from Brown university (N =

132) were recruited to participate in a study on decision making. The average age was 19.9 years (SD = 2.5) and 60% were women. The experiment was administered via computer. The research found that:

- These experiments illustrate that deliberative trust depends upon two interactive factors: the availability of self-control and the default response
- Self-control has an indirect, rather than a direct, influence on trusting behaviour
- When self-control is weak and decision making requires effort, individuals settle for a preselected default response.

**Sadi, Rasoul et.al (2011): "Behavioural Finance: The Explanation of Investors' Personality and Perceptual Biases Effects on Financial Decisions "**

The aim of this study is to recognize the popular perceptual errors among investors and its connection with their personality. 200 of the investors in Tehran's stock market were taken randomly as samples and the needed data was gathered through questions, using the parametric analysis and correlation the researchers have tried to check the accuracy of the hypotheses. the research was summed by the following conclusions:

- The finding demonstrates that the offered perceptual errors have got a significant correlation with the investors' personality.
- The conclusions exhibit that there is direct correlation between extroversion and openness whit hindsight bias and over confidence bias, between neuroticism and randomness bias, between escalation of commitment and availability biases.
- Also, there is a reverse correlation between conscientiousness and randomness bias, between openness and availability bias.

**Deuskar, Prachi et.al (2012):" Effect of Regret"**

The study empirically investigates the effect of regret on future decisions in the context of stock-trading strategies by individual investors.

This study investigates the effect of regret on future decisions in the context of stock trading via using data for all orders submitted by individual investors on the Shanghai Stock Exchange for one year. Conclusions of the research were as follows:

- People are more likely to change their trading strategy, i.e., whether to place a desperate or patient order, after experiencing regret over their most recently submitted order.
- The study finds that the effect of regret on the next order placed is stronger if the prior order was executed rather than unexecuted (i.e., action leads to more regret than inaction), if the investor lost money on the prior trade (i.e., a worse mood amplifies the effect of regret), and if the prior order represented an unusual trading strategy for the individual.
- The emotionally-charged decisions made because of regret lead to worse outcomes for investors, with the poor returns resulting from these decisions lasting for at least three months.

**Masomi, Sayed and Ghayekhloo, Sara (2012): "Consequences of human behaviours' in Economics: The Effects of Behavioural Factors in Investment decision making at Tehran Stock Exchange."**

The study investigates the role of behavioural finance and investor psychology in investment decision- making at Tehran Stock Exchange with due reference to institutional investors. A sample of 23 institutional investors is used. The Behavioural factors discussed

are: representativeness, overconfidence, anchoring, gambler's fallacy, loss aversion, regret aversion and mental accounting affected the decisions of the institutional investors operating at the TSE. Conclusions were:

- The study discovers that behavioural factors affect the investment decision-making process.
- Heuristics and Prospect theories were evident, but heuristics were dominant over the prospect theory in explaining the institutional investors' behaviour that are operating in TSE.
- The study disclosed that the effect of behavioural factors were evident on the institutional investors operating in TSE but with varying degrees from very high impact to little or no impact.

**Shaheen, Yasser (2010): The perceived Usefulness of Information for Investment Decisions: Evidence from Palestine Securities Exchange [PSE]**

The research investigates the perception of users concerning the adequacy, relevance, availability and usefulness of disclosed information in the financial reports of companies listed at the PSE.a survey methodology was used in the research and a well-designed questionnaire was distributed to a chosen sample of information users during the period 1/8/2008-1/11/2008. The research found that investors did not consider available information disclosed by the listed companies as adequate or useful.

The most important finding in the research is that lack of available information and the uselessness of this information to investors led to the inefficiency of the market on the weak level.

## 3.3 Comments:

From revising the previous studies, we can see the following facts:

This research agrees with the previous studies in respect to the general topic which is behavioural factors influencing individual investment decision making process. They all studied these behavioural factors in their local environments and stock exchanges. They all agreed upon the importance and the effect of behavioural factors on the individual investment decision making process and the practical studies applied a similar tool of research which is a questionnaire. All the studies agreed upon the important effect of overconfidence on decision making process and gave it special consideration in analysis and scrutiny.

This research differs from the previous studies mentioned above in the fact that it studies the nine behavioural factors mentioned in the prospect theory and the heuristics theory as mentioned in Tversky and Kahneman (1979). In addition, this study is solely practical while many studies done in this field were theoretical and synthesized previous studies into one body.

# Chapter Four: Research Design And Methodology And Data Analysis

- Methodology and Procedures
- Introduction
- Research Methodology
- Data analysis and explanations

## 4.1 Methodology and Procedures

## 4.2 Introduction:

This chapter describes the methodology that is used in this research. The adopted methodology to accomplish this research uses the combination techniques of descriptive approach and information about the research design, research conceptual model, population sample size, research setting, questionnaire design, statistical data analysis, content validity, pilot study and ethical aspects of the research.

## 4.3 Research Methodology:

This Research uses the quantitative analysis. The research relies on secondary data such as books and specialized studies and journals. Due to the novelty of the topic in Palestine, the research relies on the primary data collected by questionnaire distributed for relevant target group which is individual investors in Palestine Stock Exchange. The research follows the descriptive methodology approach to describe the basic features of the data in a research. Descriptive methodology is accepted methodology to be used because it is non-experimental in that it deals with the relationships existed between non-manipulated variables in a natural, rather than artificial setting. Since the events or conditions of our research interest have already existed and practiced, the researcher focuses and selects the relevant variables for analysis of the relationships among the hypotheses

### 4.3.1 Research Population:

The research population includes all individual investors in Palestine Exchange living in The Gaza Strip totalled 11,311 individual investor, as obtained from the management of El Wasata Company in the year 2012.

### 4.3.2 Inclusion Criteria:

- Individual investors are chosen.

### 4.3.3 Exclusion Criteria:

- Incomplete questionnaire responses are excluded from the research.

### 4.3.4 Research Sample:

A simple random sample was conducted. A simple random sample is a technique by which a sampling procedure that assures that each element in the population has an equal chance of being selected in the sample in order to increase the efficiency. The size of the sample is 373 questionnaires. After discussion with the supervisor, 400 questionnaires were agreed upon to be distributed. 337 questionnaires of the sample were retrieved and analyzed using SPSS programme. The researcher referred to Dr Samir Safi in the choice of sample , significance level and data analysis,(Safi,2009).

## 4.4 Data Collection:

The respondents were asked to fill the questionnaire forms which were distributed to them in their working place and during their working hours. There was no duplication because distribution was performed according to list of names for the investors in the year 2012 which was delivered to the researcher from PSE. Many brokerage houses were visited, such as El Wasata and Sahim. In addition, many individual investors were contacted personally. There were two types of data:

### 4.4.1 Secondary Data:

Secondary data was obtained from journals on behavioural finance, standard finance, investor behaviour in financial markets and behavioural factors affecting the investment decision making in financial markets.

### 4.4.2 Primary Data:

This data was collected from the field by questionnaire. Questionnaire was designed and distributed to get responses from target group of the research. Respondents were asked to provide opinions on the variables of this research, such as cognitive biases of the investors when trading in stocks.

## 4.5 Questionnaire Design:

A survey Questionnaire was designed to collect the research‘s primary data. The questionnaire included close-ended questions to facilitate the data collection process. The questionnaire is composed of nine sections to accomplish the aim of the research; each section is tested by using a number of close ended questions.

## 4.6 Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, Ordinal scale is used. The numbers assigned to the important (1,2,3,4,5) do not indicate that the interval between scales are equal, nor do they indicate absolute quantities. They are merely numerical labels. Based on Likert scale we have the following:

| Item | *Strongly agree* | *Agree* | *Do not Know* | *Disagree* | *Strongly Disagree* |
|---|---|---|---|---|---|
| **Scale** | 5 | 4 | 3 | 2 | 1 |

**Test of Normality for each field:**

Table (4.1) shows the results for Kolmogorov-Smirnov test of normality. From Table (4.1), the significance for each field is greater than 0.05, so each field has a normal distribution. Consequently, parametric tests will be used to perform the statistical data analysis.

Table 1: Kolmogorov-Smirnov test

| Field | Kolmogorov-Smirnov | |
|---|---|---|
| | **Statistic** | **P-value** |
| Overconfidence | 0.701 | 0.710 |
| Loss aversion | 0.733 | 0.656 |
| Representativeness | 0.961 | 0.314 |
| Price anchoring | 0.918 | 0.368 |
| Gambler's fallacy | 1.647 | 0.009 |
| Availability | 0.658 | 0.780 |
| Mental Accounting | 1.135 | 0.152 |
| Regret Aversion | 1.072 | 0.201 |
| Self Control | 0.874 | 0.429 |
| **All paragraphs of the questionnaire** | 0.814 | 0.521 |

**Statistical analysis Tools**

The researcher would use quantitative data analysis method. The Data analysis will be made utilizing (SPSS 20). The researcher would utilize the following statistical tools:

1) Kolmogorov-Smirnov test of normality.
2) Pearson correlation coefficient for Validity.
3) Cronbach's Alpha for Reliability Statistics.
4) Parametric Tests (One-sample T test, Independent Samples T-test, Analysis of Variance).

**Internal validity:**

As shown in Appendix (1)

Table (A1-2) clarifies the correlation coefficient for each paragraph of the "Overconfidence" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-3) clarifies the correlation coefficient for each paragraph of the "Loss aversion" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-4) clarifies the correlation coefficient for each paragraph of the Representativeness "and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-5) clarifies the correlation coefficient for each paragraph of the " Price anchoring " and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-6) clarifies the correlation coefficient for each paragraph of the "Availability" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-7) clarifies the correlation coefficient for each paragraph of the "Mental Accounting" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-8) clarifies the correlation coefficient for each paragraph of the "Regret Aversion" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

Table (A1-9) clarifies the correlation coefficient for each paragraph of the "Self Control" and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, thus all paragraphs of this field are consistent and valid to measure what it was set for.

**Structure Validity of the Questionnaire:**

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one Field and all the fields of the questionnaire that have the same level of Likert scale.

Table (4.2) clarifies the correlation coefficient for each Field and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

**Table 2: Correlation coefficient of each field and the whole of questionnaire**

| No. | Field | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| **1.** | Overconfidence | .646 | 0.000* |
| **2.** | Loss aversion | .599 | 0.000* |
| **3.** | Representativeness | .553 | 0.000* |
| **4.** | Price anchoring | .756 | 0.000* |
| **5.** | Gambler's fallacy | .463 | 0.000* |
| **6.** | Availability | .750 | 0.000* |
| **7.** | Mental Accounting | .531 | 0.000* |
| **8.** | Regret Aversion | .725 | 0.000* |
| **9.** | Self Control | .572 | 0.000* |

**Reliability of the Research:**

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient.

**a. Cronbach's Coefficient Alpha**

The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency. The value of Cronbach's Alpha equals 0.786. This value is considered high which indicates an excellent reliability of the entire questionnaire.

**b. Split Half Method:**

The correlation coefficient between the odd and even questions equal 0.689. The Spearman-Brown Coefficient equals 0.816. This correlation coefficient is statistically significant at $\alpha = 0.05$, so it can be said that the questionnaire is consistent and valid to measure what it was set for. Thereby, it can be said that the researcher proved that the test was valid, reliable, and ready for distribution for the population sample.

## 4.7 Data analysis and explanations

**The characteristics of the sample**

**Gender:**

Table 3:Gender

| Gender | Frequency | Percent |
|---|---|---|
| Male | 259 | 76.9 |
| Female | 78 | 23.1 |
| Total | 337 | 100.0 |

Table (4.3) shows that 76.9% of the sample is males and 23.1% of the sample is females.

**Age:**

Table (4.4) shows that 48% of the sample are "45 years and less", 52 % of the sample are more than 46 years.

**Table 4: Age**

| Age | Frequency | Percent |
|---|---|---|
| **Less than 35 years** | **48** | **14.2** |
| **35-45** | **114** | **33.8** |
| **46-55** | **148** | **43.9** |
| **55 years and more** | **27** | **8.0** |
| **Total** | **337** | **100.0** |

**Education level**

Table (4.5) shows that 48.4 % of the sample is " bachelor holders and higher".

**Table 5: Education level**

| Education level | Frequency | Percent |
|---|---|---|
| High school and lower | 42 | 12.5 |
| Diploma | 132 | 39.2 |
| Bachelor | 128 | 38.0 |
| Higher studies | 35 | 10.4 |
| Total | 337 | 100.0 |

**Time attended to the stock market:**

**Table 6 :How long have you attended the stock market؟**

| How long have you attended the stock market | Frequency | Percent |
|---|---|---|
| under 3 years | 106 | 31.5 |
| 3- under 5 years | 117 | 34.7 |
| 5 years and more | 114 | 33.8 |
| Total | 337 | 100.0 |

66% of the respondents attended the stock market for time periods less than five years and thirty three point eight per cent attended the market for more than five years.

## Training courses related to Stock Exchange

**Table 7: Have you attended any course of Stock Exchange؟**

| Have you attended any course of Stock Exchange | Frequency | Percent |
|---|---|---|
| Yes | 62 | 18.4 |
| Not yet | 275 | 81.6 |
| Total | 337 | 100.0 |

The percentage of people who are investing in the stock exchange without attending any course in stocks is 81%of the respondents and 19% of them attended courses in stocks related matters.

## Monthly income ($):

**Table 8: Monthly income($)**

| Monthly income ($) | Frequency | Percent |
|---|---|---|
| 1000 and less | 68 | 20.2 |
| 1001-2000 | 149 | 44.2 |
| 2001-3000 | 101 | 30.0 |
| 3001-4000 | 15 | 4.5 |
| More than 4000 | 4 | 1.2 |
| Total | 337 | 100.0 |

Table (4.8) shows that more than 50% of the sample's monthly income is less than 2001

## 4.8 Research Hypotheses:

**1. Overconfidence has an impact on individual investment decisions at Palestine Stock Exchange.**

**Overconfidence impact:**

**Table 9: Means and Test values for "Overconfidence"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I am an experienced investor | 4.14 | 82.75 | 23.02 | 0.000* | 1 |
| 2. | I feel more confident in my own investment opinions over opinions of my colleagues or friends | 3.94 | 78.87 | 22.68 | 0.000* | 2 |
| 3. | I consult others (family, friends or colleges) before making stock purchase | 2.55 | 50.92 | -6.92 | 0.000* | 6 |
| 4. | I use my predictive skills to time the market and to make my port folio performance higher than the market performance | 3.85 | 76.90 | 17.59 | 0.000* | 3 |
| 5. | I trade stocks excessively | 3.53 | 70.60 | 8.82 | 0.000* | 5 |
| 6. | I have stocks in more than one company in Palestine stock exchange | 2.36 | 47.23 | 10.32 | 0.000* | 7 |
| 7. | I have the ability to choose the stocks which its performance will be better than the market performance. | 3.84 | 76.74 | 14.01 | 0.000* | 4 |
| | **All paragraphs of the Field** | 3.46 | 69.15 | 18.16 | 0.000* | |

* The mean is significantly different from 3.

A percentage of 69.15% of investors perceive themselves as better decision makers than they really are, so the hypothesis cannot be rejected. This finding is supported by Kent et al. (2001) who found that investors are overconfident in their decision making process.

The mean of item #1 “I am an experienced investor” equals 4.14 (82.75%), Test-value = 23.02, and sig = 0.000 which is smaller than the level of significance $\alpha = 0.05$. It might be concluded that the respondents might agree to this item. Hence, individual investors in Palestine Stock Exchange are overconfident and optimistic. This overconfidence means that they do not learn from their mistakes because they do not see overconfidence as a bias or mistake affecting their decision making (Galant and Debbie, 1995). The mean of item #6 “I have stocks in more than one company in Palestine stock exchange” equals 2.36 and sig = 0.000 $\alpha = 0.05$. The sign of the test is negative. It might be concluded that the respondents might disagree to this item. Therefore, individual investors’ overconfidence and optimism lead them to not diversify their investment portfolios. Consequently, they may incur losses frequently. The mean of the Field “**Overconfidence**” equals 3.46 with sig =0.000 .The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 3. It might be concluded that the respondents agreed to field of “**Overconfidence** ". This means that individual investors at the Palestine Stock Exchange have the degree of confidence at the moderate level which can be explained by the fact that Palestine stock exchange is still emerging, so its trend fluctuates complexly. Generally speaking, overconfidence may lead to detrimental effects on investment such as:

1- Overconfident investors overestimate their ability to evaluate a company as a potential investment. As a result, they can become blind to any negative information that might normally indicate a warning sign that either a stock purchase should not take place or a stock that was already purchased should be sold.

2- Overconfident investors can trade excessively as a result of believing that they possess special knowledge that others don't have. Excessive trading behaviour has proven to lead to poor returns over time.
3- Because they don't know, don't understand, or don't heed historical investment performance statistics, overconfident investors can underestimate their downside risks. As a result, they can unexpectedly suffer poor portfolio performance.
4- Overconfident investors hold undiversified portfolios, thereby taking on more risk without a commensurate change in risk tolerance. Often, overconfident investors don't even know that they are accepting more risk than they would normally tolerate

Studies have shown that investor overconfidence results in excessive trading. Odean (1998) figured that overconfidence encouraged investors to trade more than rational investors. Barber and Odean (1999) also believe that high levels of trading in financial markets are due to overconfidence. They sustain that overconfidence increases trading activity because it causes investors to be too certain about their own opinions and to not consider sufficiently the opinion of others, these findings are similar to item 5 ( I trade stocks excessively). Similarly speaking, studies by Allen and Evans 2005, p.108, Gervais, Simon and Odean (2001, p.1) suggest that people usually believe in their skills and knowledge to outperform the market. According to Seppälä, Antti (2009), people tend to overestimate their initial capability to choose the better performing asset from two alternatives or estimate the return of an asset, after learning the realization .Kahneman et al. (1998) indicated that overconfident investors overestimate their private information and neglect available information and they presented a related model based on overconfidence and biased self-attribution. Overconfidence leads investors to overweight their private information in assessing the value of securities, causing the stock price to overreact.

Dittrich et al (2001) observed in their experiment that around two thirds of their participants were prone to overconfidence. They further observed that those investors who lose their money in investment, gain more confidence.

2. **Loss Aversion has an impact on individual investment decisions at Palestine Stock Exchange**.

**Loss Aversion impact:**

**Table 10 :Means and Test values for "Loss aversion"**

| No. | Item | mean | proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I am more concerned about a large loss in my stock than missing a substantial gain | 1.73 | 34.58 | -29.83 | 0.000* | 6 |
| 2. | I feel nervous when large paper losses (price drops) have in my invested stocks | 2.01 | 40.24 | -22.95 | 0.000* | 4 |
| 3. | I will not increase my investment when the market performance is poor | 1.86 | 37.15 | -26.45 | 0.000* | 5 |
| 4. | When it comes to investment, no loss of capital (invested money) is more important than returns (profits) | 2.39 | 47.74 | -10.67 | 0.000* | 3 |
| 5. | I sell stocks that increased in value very quickly | 3.88 | 77.57 | 16.79 | 0.000* | 1 |
| 6. | I keep stocks that decreased in value for long time | 3.73 | 74.66 | 11.23 | 0.000* | 2 |
| | **All paragraphs of the Field** | 2.60 | 51.99 | -18.48 | 0.000* | |

* The mean is significantly different from 3

The statistical analysis here shows that the individual investors in the stock exchange are not suffering from the psychological bias which is Loss Aversion. Hence, the hypothesis can be rejected. The mean of item #5 "I sell stocks that increased in value very quickly" equals 3.88 with sig = 0.000. It might be concluded that the respondents agreed to this paragraph, so individual investors in Palestine Stock Exchange try to avoid incurring losses by selling winners so soon because they believe that as long as they can retrieve their financial value ,they are not losing. This behaviour

is not unique or inclusive to loss aversion only because it is characteristic to loss aversion and overconfidence. Consequently, the investors are not necessarily loss averse as supported by the finding in item number 4. The mean of item #4 "I am more concerned about a large loss in my stock than missing a substantial gain" equals 1.73 with sig = 0.001. The sign of the test is negative. It might be concluded that the respondents disagreed to this item. This indicates that the investors are reluctant and don't care about incurring losses if exposed to both a loss and a gain of the same size. The mean of the Field "Loss aversion" equals 2.60. Test-value = -18.48, and sig =0.000. The sign of the test is negative. It might be concluded that the respondents disagreed to the field "Loss aversion "The result shows that the individual investors tend to be risk seekers in their investment decisions. This finding can be psychologically explained if we take into consideration the unique psychological formation of the citizens in The Gaza Strip who are accommodating and adapting to different kinds of loss. Similar findings are found in where the results strongly reject the loss-aversion story, as investors react to prior positive (negative) changes in wealth by increasing (reducing) risk-taking. This holds for different classes of investors and for changes in overall wealth, as well as for financial and real estate capital gains. Contrary to the finding in this study, many studies showed that individual investors are loss averse. According to Luong and Thu Ha 2011 loss aversion has a moderate impact on the individual investors in HOSE. Reviewing the trading records of 160,000 customers (10,000 accounts) at a large discount brokerage firm throughout 1987 and 1993, Odean (1998) noted that individual investors projected a significant affinity towards selling winners and holding in to losing stocks. Benartzi and Thaler 1995 demonstrated experimentally that when subjects are asked to allocate their defined contribution pension plans between stocks and fixed incomes, their responses differed sharply depending on how historical returns were presented to them. If they were shown 30 one-year returns, their median allocation

to stocks was 40%, but if they were shown 30-year returns their median allocation to stocks was 90%.Recently, Brown et al. (2002), using Australian data, show that loss-aversion is a short-term phenomenon, predictor of short-term behaviour. Jackson (2002) showed that, for Australian data, the disposition effect fades away after approximately 200 days. Benartzi and Thaler (1995) argue that the size of the equity premium suggests that investors weigh losses twice as much as gains, and that they evaluate their portfolios on an annual basis.

**3. Representativeness has an impact on individual investment decisions at Palestine Stock Exchange.**

**Representativeness impact:**

**Table 11: Means and Test values for "Representativeness"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I tried to avoid investment in companies with a history of poor earnings | 4.23 | 84.69 | 28.10 | 0.000* | 2 |
| 2. | I rely on past performance to buy stocks because I believe that good performance will continue | 3.93 | 78.69 | 21.88 | 0.000* | 4 |
| 3. | Good stocks are firms with past consistent earnings growth. | 4.13 | 82.67 | 23.61 | 0.000* | 3 |
| 4. | I buy hot stocks and avoid stocks that performed poorly in the near past. | 4.31 | 86.17 | 33.15 | 0.000* | 1 |
| | **All paragraphs of the Field** | 4.15 | 83.02 | 43.12 | 0.000* | |

* The mean is significantly different from 3

The mean of item #4 "I buy hot stocks and avoid stocks that performed poorly in the near past" equals 4.31 with sig = 0.000. It might be concluded that the respondents agreed to this item. It indicates that the investors are prone to the bias representativeness. Practically speaking, this may affect their investment decisions when they always choose hot stocks to buy and neglect other stocks which may have potential for performing well in the future. In addition to that, clinging to buying the hot stocks always leads to what is known as momentum which means the

rising stocks will keep rising and the falling ones will keep going down in a specific period of time.

The mean of item #2 “I rely on past performance to buy stocks because I believe that good performance will continue” equals 3.93 with sig = 0.000. It might be concluded that the respondents agreed to this item. The result here shows that the investors take into consideration stocks past performance as a predictor of their future investment. So, it is similar to anchoring in that they consider past performance as a reference point for their future investment decisions and this may prevent the investors from grabbing investment chances that exist in the market. The mean of the Field “**Representativeness**” equals 4.15 with sig =0.000. It might be concluded that the respondents agreed to field of “**Representativeness** ".Similarly speaking, a research in finance conducted by Fama (1970) in the US and UK exposed that prior stock performance was generally not a good indication or prediction of future stock returns. However, investors continued to rely on such information in their decision making process. De bondt and Thaler (1985) found that those stocks which had performed very well in the preceding 5-year period tended to underperform those that had done very poorly by over 30%in the subsequent 5-year period. Similar to these findings, Barber and Odean (2008) also confirm that individual investors prefer to buy attention grabbing stock that is in news or that has experienced higher unexpected trading volume or stocks which have provided some excessive one day returns and that behaviour also signals towards the good expectation relative to the past performance or publicity of that particular stock. Shefrin and Statman (1995) show that survey respondents believe that the shares of companies that do well in the annual Fortune magazine survey of corporate reputation will prove to be good investments. Their findings indicate that these companies tend to be large companies (past winners) with low book-to-market ratios, which are characteristics

linked empirically to poor subsequent returns. Cooper, Dimitrov, and Rau (2001) show that investors can be influenced also by the name a company adopts, again consistent with the representativeness heuristic. Their analysis of 95 companies that changed to dot-com (.com) names during 1998 and 1999 finds that these companies earned statistically significant and sizably positive abnormal returns that did not appear to reverse in the following 120 trading days. They note that adoption of the dot-com name appears to lead to "investor mania." Not all of the companies that changed names had substantial involvement with the internet, but the extent to which they did was not related to the share price response.

**4. Anchoring has an impact on individual investment decisions at Palestine Stock Exchange.**

**Anchoring impact:**

**Table 12: Means and Test values for "Price anchoring"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I compare the current stock prices with their recent year high and low price to justify my stock purchase. | 3.84 | 76.79 | 22.03 | 0.000* | 5 |
| 2. | I am likely to sell my stock after the price hits recent year high | 4.09 | 81.78 | 24.74 | 0.000* | 1 |
| 3. | I am unlikely to buy a stock if it was more expensive than last year | 3.93 | 78.57 | 17.86 | 0.000* | 3 |
| 4. | I see the stock price as high if the price has increased to the current year high | 3.87 | 77.37 | 16.71 | 0.000* | 4 |
| 5. | I believe that the position of the year high and low price determined the current stock price movement range. | 3.73 | 74.58 | 12.38 | 0.000* | 6 |
| 6. | I use the stock purchase price as a reference point for trade. | 3.95 | 78.92 | 15.37 | 0.000* | 2 |
| | **All paragraphs of the Field** | 3.90 | 77.97 | 30.29 | 0.000* | |

* The mean is significantly different from 3

The mean of item #2 “I am likely to sell my stock after the price hits recent year high” equals 4.09 with sig = 0.000. It might be concluded that the respondents agreed to this paragraph. This result shows that the investors rely on a reference point that is stock price in order to take a decision of selling or buying. To stop on a concrete ground, this may lead to hindsight when taking investment decisions. The mean of item #6 “I believe that the position of the year high and low price determined the current stock price movement range” equals 3.73 with sig = 0.000. It is concluded that the respondents agreed to this item. This result implies that the investors use current year prices as an arbitrary reference point for stocks they invest in without taking into their consideration the far future. Practically speaking, the investors may not be able to see potential investment chances larking in the horizon because they limit themselves to a very limited time range. Therefore, they may lose a lot of potential returns. The mean of the Field “Price anchoring” equals 3.90 with sig=0.000. It might be concluded that the respondents agreed to field of “Price anchoring ". This is a moderate mean which indicates that Anchoring has a moderate impact on individual investment decisions at Palestine Stock Exchange. This reflects the status quo of the Palestine Stock Exchange that many people use techniques to analyze and predict the changes of stock prices in the future based on the previous prices. Benartzi and Thaler 1995 argued that a reference point was the stock price that investors compared with. Huddart and Lang, 1999 noted that highest stock prices in the previous year are often selected as a reference point and an anchor. In a study conducted by Hoguet, 2005, he concluded that investors tend to anchor to the most recent information when asked to define a quantum, such as earning expectations for a stock. Fischer and Gerhardt (2007) find that the theoretical recommendation to treat winning and losing assets equally and focus only on future developments is not followed either. There is a tendency to sell winning stocks too early and keep losing stocks too long. This

so called disposition effect was introduced by Shefrin and Statman as a combination to two cognitive errors: loss aversion and anchoring.

**5. Gambler's fallacy has an impact on individual investment decisions at Palestine Stock Exchange.**

**Gambler's Fallacy impact:**

**Table 13 :Means and Test values for "Gambler's fallacy"**

| Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) |
|---|---|---|---|---|
| I can normally expect the end of the market returns whether they are good or bad. | 3.95 | 78.98 | 19.33 | 0.000* |

* The mean is significantly different from 3

The mean of paragraph "I can normally expect the end of the market returns whether they are good or bad" equals 3.95 with sig = 0.000. It might be concluded that the respondents agreed to this paragraph. This is a moderate mean which indicates that Anchoring has a moderate impact on individual investment decisions at Palestine Stock Exchange. This means that individual investors in The Palestine Stock Exchange moderately have the bias of being able to anticipate the ends of good or poor market. This finding means that the investors may take risky or faulty investment decisions depending on the bias that they are able to predict the end of the market whether bad or good. The study of Benartzi and Thaler (2000) about investors' immature diversification strategies, found evidence that Asset Allocation Puzzle can be explained by a new behavioural portfolio model. To verify the findings questionnaires were distributed among several investment consultants who gave information about their market expectations. These expectations were heavily influenced by the behavioural aspects such as gambler's fallacy and over confidence. It has been argued that the disposition effect in finance (the tendency of investors to sell stocks that have appreciated and hold stocks that have lost value) is caused by

gambler's fallacy beliefs. In particular, the reasoning goes, if a stock has risen repeatedly in the past, it's due for a downturn and thus it's time to sell. Similarly, stocks that have lost value are due to appreciate, so one should hold those stocks, Shefrin and Statman, 1985; Odean, 1998.

## 6. Availability has an impact on individual investment decisions at Palestine Stock Exchange.

**Availability impact:**

**Table 14: Means and Test values for "Availability"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | If I heard from a friend about a stock that achieved high returns, I would buy it. | 3.87 | 77.43 | 19.96 | 0.000* | 5 |
| 2. | If I want to invest in the stocks of a certain company, I will rely on my coworkers opinions | 3.91 | 78.21 | 19.12 | 0.000* | 4 |
| 3. | If I want to invest in the stocks of a certain company, I will rely on information from the internet | 3.92 | 78.45 | 17.14 | 0.000* | 3 |
| 4. | If I want to invest in the stocks of a certain company, I will rely on information from the same company | 3.82 | 76.43 | 13.40 | 0.000* | 6 |
| 5. | If I want to invest in the stocks of a certain company, I will rely on information from financial experts | 4.17 | 83.45 | 26.52 | 0.000* | 1 |
| 6. | If a friend advised me to purchase a stock of certain company then news arrived me about the probability of that stock's price rising, I will invest in these stocks. | 3.96 | 79.16 | 23.47 | 0.000* | 2 |
| | **All paragraphs of the Field** | 3.94 | 78.85 | 32.90 | 0.000* | |

* The mean is significantly different from 3

The mean of item #5 “If I want to invest in the stocks of a certain company, I will rely on information from financial experts” equals 4.17 with sig = 0.000 it might be concluded that the respondents agreed to this paragraph. So, the result indicates that the investors rely heavily on available information spelled by financial experts in the market. The practical consequences of this reliance on the available source of information are the investors themselves will not bother themselves of taking their own investment decisions and consequently, they will lose the chance of being experienced themselves.

In addition to that, the investors may lose many chances for investment just because they need time to consult financial experts on the decision to be made.

The mean of item #4 “If I want to invest in the stocks of a certain company, I will rely on information from the same company” equals 3.82 with sig = 0.000. It might be concluded that the respondents agreed to this item. This result shows that the investors are ready to rely on the same company information when taking their investment decisions. The reflection of this tendency may be very serious in the practical practice because the validity and reliability of such information cannot be trusted as a source of information about the financial well being of the company or its stocks.

Similar studies like (Kliger & Kudryavtsev, 2010) confirm the prevalence of availability heuristic in the decision making process of the investors. Sevil, Sen and Yalama (2007) also found that heuristics play a vital role in affecting the decisions made by inventors in the stock exchange. The "recency" aspect of availability heuristic is closely connected to another well-known psychological effect – the effect of priming. Priming is an unconscious remembering process, which occurs when a certain stimulus or event contemporaneously increases the

availability of (primes) a specific informative category. It may affect information processing and, as a result, also decision making Baron and Byrne 1997. Shiller 1998 argues that investors' attention to investment categories (e.g., stocks versus bonds or real estate; investing abroad versus investing at home) may be affected by alternating waves of public attention or inattention. Similarly, Barber and Odean, 2008 found that when choosing which stock to buy, investors tend to consider only those stocks that have recently caught their attention (stocks in the news, stocks experiencing high abnormal trading volume, stocks with extreme one day returns). (Frieder, 2004) finds that stock traders seek to buy after large positive earnings surprises and sell after large negative earnings surprises, and explains this tendency by the availability heuristic, assuming that the salience of an earnings surprise increases in its magnitude. Chiodo et al. (2003) construct a simple model of belief formation based on the assumption that it is easier for people to recall information which has recently arrived, and respectively, investors overreact to new information. Lee et al. (2005) discuss the "recency bias", which is the tendency of people to make judgments about the likelihood of events based on their recent experience. They find that analysts' forecasts of firms' long-term growth in earnings per share tend to be relatively optimistic when the economy is expanding and relatively pessimistic when the economy is contracting. This finding is consistent with the availability heuristic, indicating that forecasters overweight current state of the economy in making long-term growth predictions.

**7. Mental accounting has an impact on individual investment decisions at Palestine Stock Exchange.**

**Mental accounting impact:**

**Table 15 :Means and Test values for "Mental Accounting"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I tend to treat each element of your investment portfolio separately | 4.11 | 82.21 | 27.46 | 0.000* | 1 |
| 2. | I hesitate selling stocks that had high returns in the past even though their prices decrease nowadays | 3.85 | 76.90 | 18.62 | 0.000* | 3 |
| 3. | I don't care about the performance of my investment portfolio as a whole but I care about the return of each account separately | 4.06 | 81.19 | 21.62 | 0.000* | 2 |
| | **All paragraphs of the Field** | 4.00 | 80.05 | 31.90 | 0.000* | |

* The mean is significantly different from 3

The mean of item #1 "I tend to treat each element of my investment portfolio separately" equals 4.11 with sig = 0.000.It might be concluded that the respondents agreed to this paragraph. This result confirms that investors tend to treat each element of investment portfolio separately, thus ignore the connection between different investment possibilities as mentioned by a study by (Rockenbach, 2004, p.a513). Nonetheless, to stand on a concrete ground this can cause inefficiency and inconsistency in making decisions because the investors may ignore important relations and connections between different investments. The mean of item #2 "I hesitate selling

stocks that had high returns in the past even though their prices decrease nowadays" equals 3.85 with sig = 0.000. It might be concluded that the respondents agreed to this item. This result indicates that the investors cling to losing stocks because they once were wining ones because they classify them in a separate mental account where they are labelled as wining stocks. The consequences of this orientation may be serious on investment decisions as the investors are reluctant to sell stocks that relate to this mental account. Put differently, Mental accounting bias can cause investors to hesitate to sell investments that once generated significant gains but, over time, have fallen in price. According to Kent et al. 2001, investors were very much influenced by historical performance of the stock price. These findings were consistent with Daniel, Hirshleifer, Teoh, 2002 where they suggest that investors may form theories of how the market works based upon irrelevant historical values, somewhat analogous to making decisions based upon mental accounting with respect to arbitrary reference points. Barberis and Huang 2000 have suggested that investors apply mental accounting to stock holdings and react separately to gains and losses for different stocks.

**8. Regret aversion has an impact on investment decisions at Palestine Stock Exchange.**

**Regret aversion impact:**

**Table 16 :Means and Test values for "Regret Aversion"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I keep the stocks that decreased in value and I don't sell them | 4.13 | 82.51 | 24.68 | 0.000* | 1 |
| 2. | I sell the stocks that increased in value faster | 4.02 | 80.42 | 24.43 | 0.000* | 3 |
| 3. | I invest in companies with low risks | 4.09 | 81.80 | 25.94 | 0.000* | 2 |
| 4. | I don't buy the stocks that decreased in value | 3.66 | 73.21 | 11.44 | 0.000* | 5 |
| 5. | I buy the stocks that a group of investors | 3.76 | 75.16 | 12.50 | 0.000* | 4 |
| | **All paragraphs of the Field** | 3.93 | 78.61 | 30.99 | 0.000* | |

* The mean is significantly different from 3

The mean of item #1 "I keep the stocks that decreased in value and I don't sell them" equals 4.13 with sig = 0.000. It might be concluded that the respondents agreed to this item. The result exemplifies typical regret aversion behaviour when the investors hold losing stocks instead of selling them because they do not want to feel regretful about buying such stocks at the first place. So, from a practical point of view, this behaviour may lead to serious problems related to investment decisions. The investors become irrational in their investment decisions and may lose many chances for selling the losing stocks and purchasing others especially when they keep losing and their prices keep decreasing. In other words, the investors seem to be willing to sell shares increasing in value than decreasing ones. Many people think that they do not lose until

they sell losing stocks, thus, they refuse to sell them although selling may be the best solution at this time. The mean of item #4 “I don’t buy the stocks that decreased in value” equals 3.66 with sig = 0.000. It might be concluded that the respondents agreed to this item. By not buying the stocks that decreased in value; investors try to avoid regretting the decision in future if their prices will not increase; but the consequences of such behaviour may include ignoring modest investment chances which may hold great potential in the future. The mean of the Field “**Regret Aversion**” equals 3.93 with sig=0.000. it is concluded that the respondents agreed to field of “**Regret Aversion** ".This result is high and indicates that the variable regret aversion has a strong impact on the decisions of the individual investors in The Palestine Stock Exchange. Regret may drive investors to avoid selling stocks that have gone down because of the chance that the stocks later regain their value. And they may sell stocks that have gone up so they can avoid regretting the failure to do so before the stocks, Shiller 1998. Kahneman and Tversky (1982) using an investment scenario. They found that an investor who was described has having lost $1,200 by switching from an investment in stock A to an investment in stock B (abnormal behaviour) was judged by most respondents to feel more regret than a second investor who lost the same amount of money by holding onto his investment in stock B after considering stock A (normal behaviour).Fischer and Gerhardt (2007) find that the theoretical recommendation to treat winning and losing assets equally and focus only on future developments is not followed either. There is a tendency to sell winning stocks too early and keep losing stocks too long. This so called disposition effect was introduced be Shefrin and Statman as a combination to two cognitive errors: loss aversion and anchoring.

**9. Self-control has an impact on individual investment decisions at Palestine Stock Exchange.**

**Self-control impact:**

**Table 17: Means and Test values for "Self Control"**

| No. | Item | Mean | Proportional mean (%) | Test value | P-value (Sig.) | Rank |
|---|---|---|---|---|---|---|
| 1. | I can achieve profits out of my stocks by consulting expert always. | 4.07 | 81.37 | 22.63 | 0.000* | 1 |
| 2. | If I believe that some details about certain stock are not available to me, I don't buy that stock. | 3.88 | 77.66 | 20.21 | 0.000* | 3 |
| 3. | Whatever my investment goals are in stock exchange, I can achieve them | 3.82 | 76.42 | 15.82 | 0.000* | 4 |
| 4. | I care about spending on my daily obligations more than caring about saving for the future | 2.24 | 44.79 | -13.50 | 0.000* | 5 |
| 5. | I divide my money to capital for investment and money for daily spending | 4.02 | 80.36 | 17.70 | 0.000* | 2 |
| | **All paragraphs of the Field** | 3.61 | 72.12 | 23.55 | 0.000* | |

* The mean is significantly different from 3

The mean of item #1 "I can achieve profits out of my stocks by consulting expert always" equals 4.07 with sig = 0.000. it might be concluded that the respondents agreed to this paragraph. The result shows that the investors are highly prone to the bias of having control over their investments especially if they consult financial experts before taking steps toward the investment available to them. To stand on a solid ground, Self control may be the result of the investors

feeling they are optimistic and overconfident of their investment decisions. The mean of item #4 “I care about spending on my daily obligations more than caring about saving for the future” equals 2.24 with sig = 0.001. The sign of the test is negative. It might be concluded that the respondents disagreed to this item. This result indicates that the investors are trying to put certain limitations and regulations on their spending in order to feel that they have self control on their own investment for the future. Illusion of control bias can cause investors to use limit orders and other such techniques in order to experience a false sense of control over their investments. In fact, the use of these mechanisms most often leads to an overlooked opportunity or, worse, a detrimental, unnecessary purchase based on the occurrence of an arbitrary price. The mean of the Field “**Self Control**” equals 3.61 with sig =0.000. It might be concluded that the respondents agreed to field of “**Self Control** ".Therefore, the effect of Self Control on individual investment decision making is moderate. Similarly stated in a study by Thaler and Shefrin 1981, investors are subject to temptation, and they look for tools to improve self control. According to the views of Thaler & Shefrin (1981) investors should always show some sort of tolerance and should be looking for improving their self-control. Psychologically it is also known as self-regulation. Thaler and Shefrin (1981) analyze how people exhibit self-control with respect to saving behaviour. Shefrin and Statman 1984 develop a theory of dividends based on this idea, where mainly elderly investors have a preference for dividends. Shefrin and Statman (1985) refer to self-control when they explain how investors deal with the impulse to hold onto losing investments for too long.

**10. Differences between respondents in age, culture and education do not have an impact on investment decisions at Palestine Stock Exchange.**

**10.1 Differences between respondents in gender do not have an impact on investment decisions at Palestine Stock Exchange.**

There is insignificant relationship between the dependent variables of the study, except Gambler's fallacy, and the respondents' gender.

**Table 18: Independent Samples T-Test of the fields and their p-values for Gender**

| No. | Field | Test Value | Sig. | Means | |
|---|---|---|---|---|---|
| | | | | Male | Female |
| 1. | Overconfidence | 0.462 | -0.736 | 3.45 | 3.49 |
| 2. | Loss aversion | 0.292 | 1.056 | 2.61 | 2.56 |
| 3. | Representativeness | 0.513 | -0.654 | 4.14 | 4.18 |
| 4. | Price anchoring | 0.352 | -0.932 | 3.88 | 3.95 |
| 5. | Gambler's fallacy | 0.997 | 0.004 | 3.95 | 3.95 |
| 6. | Availability | 0.440 | -0.773 | 3.93 | 3.98 |
| 7. | Mental Accounting | 0.828 | -0.218 | 4.00 | 4.01 |
| 8. | Regret Aversion | 0.178 | -1.351 | 3.91 | 4.00 |
| 9. | Self Control | 0.054 | -2.026 | 3.68 | 3.70 |
| | **All paragraphs of the questionnaire** | 0.209 | -1.260 | 3.64 | 3.69 |

This finding supports the hypothesis that "Differences between respondents in age, culture and education do not have an impact on investment decisions at Palestine Stock Exchange"

In contrast of this finding, studies assert that the variable Gender has a significant effect on the investors' investment decisions. For example, Odean and Barber 2000 have produced very interesting findings. The study of differences in trading habits according to an investor's gender covered 35,000 households over six years. The study found that men were more overconfident than women regarding their investing skills and that men trade more frequently. As a result, males not only sell their investments at the wrong time but also experience higher trading costs than their female counterparts. Females trade less (buy and hold their securities), at the same time sustaining lower transaction costs. The study found that men trade 45 percent more than women.

This finding is supported by, Barber and Odean 2001 which concluded that men trade as much as 45% more than women thereby reducing their yields and overconfidence was the only explanation that could be provided for this behaviour of men. In addition, Felton et. al. 2003 have studied the effect of gender and optimism on the riskiness of investment choices .They have concluded that males make more risky investment choices than females, and that this difference was primarily due to the riskier choices of optimistic males. Kuo et al. (2005) thoroughly surveyed Taiwanese individual stock investors with respect to gender role in investment, indicating that females are psychologically less confident and pessimistic than males.

### 10.2 Differences between respondents in age do not have an impact on investment decisions at Palestine Stock Exchange.

There is a positive significant relationship between the field of "Representativeness, Gambler's fallacy and Mental Accounting" and the respondents'' age.

We conclude that the respondents' Age has significant effect on these fields.

Table (18) shows that there are insignificant differences among the respondents in the fields of "Overconfidence, Loss aversion, Price anchoring, Availability, Regret Aversion and Self Control" due to Age.

In addition, Gambler's fallacy and Mental Accounting, Less than 45 years respondents have the higher than 45 years and more respondents

**Table 19: Independent Samples T-Test of the fields and their p-values for Age**

| No. | Field | Test Value | Sig. | Means | |
|---|---|---|---|---|---|
| | | | | Less than 45 | 45 and more |
| 1. | Overconfidence | -1.574 | 0.117 | 3.42 | 3.50 |
| 2. | Loss aversion | 0.017 | 0.986 | 2.60 | 2.60 |
| 3. | Representativeness | -3.200 | 0.002* | 4.06 | 4.23 |
| 4. | Price anchoring | -0.379 | 0.705 | 3.89 | 3.91 |
| 5. | Gambler's fallacy | -2.560 | 0.011* | 3.82 | 4.07 |
| 6. | Availability | -0.053 | 0.958 | 3.94 | 3.94 |
| 7. | Mental Accounting | -2.594 | 0.010* | 3.92 | 4.08 |
| 8. | Regret Aversion | -0.016 | 0.988 | 3.93 | 3.93 |
| 9. | Self Control | -1.242 | 0.215 | 3.57 | 3.64 |
| | **All paragraphs of the questionnaire** | -1.796 | 0.073 | 3.62 | 3.68 |

* Means differences are significant at $\alpha = 0.05$

The statistics indicate that younger investors are liable to the behavioural factors such as Representativeness, Gambler's fallacy and Mental Accounting. Consequently, the hypothesis that Differences between respondents in age do not have an impact on investment decisions at Palestine Stock Exchange can be rejected. So, from a practical point of view, younger investors can commit different kinds of mistakes due to their susceptibility to behavioural biases. These

findings can be due to the fact that younger investors are less experienced and more prone to behavioural biases. Similar findings are found in Barclays Wealth Insights (2011), as age increases (and holding all other things equal):

- Composure increases (they are less stressed).
- People become less concerned with preventing bad things from happening.
- Risk tolerance decreases — a pattern that has been indicated by other research studies.

This means that older people become less prone to psychological biases than younger ones.

Contradictory findings are found in a study of Gunay, Suleyman and Demirel, Engin (2011), although age differences on amount of investment were not significant, interactions between participant age and vignette information are found. Results of the study indicate that older and younger adults make similar decisions using different pieces of information.

### 10.3Differences between respondents in Education level do not have an impact on investment decisions at Palestine Stock Exchange.

Table (4.20) shows that there are positive significant differences between the fields of "Overconfidence, Gambler's fallacy and Mental Accounting", and the **Education level**. We conclude that the respondents' **Education level** has significant effect on these fields. In addition, Table (4.20) shows that there is insignificant difference among the respondents regarding to the fields of (Loss aversion, Representativeness, Price anchoring, Availability and Self Control) due to **Education level**. Table (4.20) also shows that, for the fields" Overconfidence, Gambler's fallacy and Mental Accounting", **Bachelor** have the higher mean than other Education **levels**.

**Table 20: One- Way Analysis of Variance (ANOVA) T-Test of the fields and their**

| No. | Field | Test Value | Sig. | Means | | | |
|---|---|---|---|---|---|---|---|
| | | | | High school and lower | Diploma | Bachelor | Higher studies |
| 1. | Overconfidence | 3.566 | 0.014* | 3.36 | 3.45 | 3.54 | 3.29 |
| 2. | Loss aversion | 0.855 | 0.465 | 2.64 | 2.57 | 2.60 | 2.68 |
| 3. | Representativeness | 0.077 | 0.972 | 4.18 | 4.14 | 4.15 | 4.15 |
| 4. | Price anchoring | 0.933 | 0.425 | 3.94 | 3.87 | 3.94 | 3.80 |
| 5. | Gambler's fallacy | 6.168 | 0.000* | 3.86 | 4.04 | 4.32 | 3.51 |
| 6. | Availability | 1.890 | 0.131 | 4.10 | 3.90 | 3.96 | 3.86 |
| 7. | Mental Accounting | 2.768 | 0.042* | 4.08 | 3.94 | 4.06 | 3.83 |
| 8. | Regret Aversion | 2.445 | 0.064 | 4.04 | 3.85 | 4.00 | 3.86 |
| 9. | Self Control | 1.570 | 0.196 | 3.55 | 3.63 | 3.63 | 3.46 |
| | **All paragraphs of the questionnaire** | 2.435 | 0.065 | 3.70 | 3.63 | 3.69 | 3.56 |

* Means differences are significant at $\alpha = 0.05$

The results show that bachelor holders among individual investors studied in this sample are susceptible to overconfidence, gambler's fallacy and mental accounting than other investors.

It is worth mentioning that the three biases are related because one leads to the other. Because Overconfidence is the tendency for people to overestimate their knowledge, abilities and the precision of their information, for that reason investment decisions become based on conjecture rather than fundamental value. This overconfidence leads individual investors to trust their own abilities to predict the ending of the market, whether it is bad or good. Consequently, individual investors will not care about diversifying their portfolios because they think different

accounts are separate and they do not affect each other. They are not concerned with the totality of the portfolio, so they become susceptible to mental accounting.

In addition, higher studies holders appear to be less affected by these biases when taking their investment decision making because they are probably older in age and richer in experience. Hence, they are wiser

### 10.4 Differences between respondents in attended course in Stock Exchange do not have an impact on investment decisions at Palestine Stock Exchange.

Table (4.21) shows that there is insignificant difference in respondents' answers toward each field due to attended course in Stock Exchange. Thus, the characteristic of the respondents attended course in Stock Exchange has no effect on each field.

**Table 21: Independent Samples T-Test of the fields and their p-values**

| No. | Field | Test Value | Sig. | Means | |
|---|---|---|---|---|---|
| | | | | Yes | Not yet |
| 1. | Overconfidence | -0.752 | 0.453 | 3.42 | 3.47 |
| 2. | Loss aversion | 1.298 | 0.195 | 2.66 | 2.59 |
| 3. | Representativeness | -1.106 | 0.270 | 4.09 | 4.16 |
| 4. | Price anchoring | -1.682 | 0.094 | 3.79 | 3.92 |
| 5. | Gambler’s fallacy | -1.389 | 0.166 | 3.81 | 3.98 |
| 6. | Availability | -0.695 | 0.487 | 3.90 | 3.95 |
| 7. | Mental Accounting | -1.958 | 0.051 | 3.87 | 4.03 |
| 8. | Regret Aversion | -1.728 | 0.085 | 3.82 | 3.95 |
| 9. | Self Control | -1.605 | 0.109 | 3.52 | 3.63 |
| | **All paragraphs of the questionnaire** | -1.772 | 0.077 | 3.59 | 3.67 |

* Means differences are significant at $\alpha = 0.05$

The result derived from this table shows that the hypothesis : Differences between respondents in attended course in Stock Exchange do not have an impact on investment decisions at Palestine Stock Exchange cannot be rejected . The explanation for this finding could be the fact that The Palestine Stock Exchange is an emerging organization which was founded in 1995. Consequently, the time range is not long enough for the investors to gain experience by practice or by attending training courses in financial markets to affect the behaviour of individual investors clearly. Hence, investors do not have the proper background in behavioural finance. So, investors are equal in their ignorance of the psychology of investment.

This will have serious ramifications on the investors practice on a daily basis where they may commit many mistakes and be prone to many biases while taking their investment decisions.

### 10.5- Differences between respondents in monthly income in Stock Exchange do not have an impact on investment decisions at Palestine Stock Exchange.

Table (4.22) shows that there is insignificant difference between the fields of "Mental Accounting and Self Control", and **monthly income**. It is concluded that the respondents' **monthly income** has no effect on these fields. In addition, Table (30) shows that there is significant difference among the respondents regarding to these fields of (Overconfidence, Loss aversion, Representativeness, Price anchoring, Gambler's fallacy, Availability and Regret Aversion) due to **monthly income**. We conclude that the respondents' **monthly income** has significant effect on these fields.

From table (4.22), it is concluded that: For each field, respondents with **More than 2000** $ have the higher means than others monthly **income**.

**Table 22: One- Way Analysis of Variance (ANOVA) T-Test of the fields and their**

| No. | Field | Test Value | Sig. | Means | | |
|---|---|---|---|---|---|---|
| | | | | 1000 and less | 1001-2000 | More than 2000 |
| 1. | Overconfidence | 20.256 | 0.000* | 3.16 | 3.51 | 3.56 |
| 2. | Loss aversion | 3.258 | 0.040* | 2.70 | 2.56 | 2.59 |
| 3. | Representativeness | 9.967 | 0.000* | 3.92 | 4.19 | 4.23 |
| 4. | Price anchoring | 8.192 | 0.000* | 3.69 | 3.90 | 4.02 |
| 5. | Gambler's fallacy | 8.721 | 0.000* | 3.56 | 4.01 | 4.09 |
| 6. | Availability | 9.963 | 0.000* | 3.70 | 3.98 | 4.04 |
| 7. | Mental Accounting | 1.402 | 0.247 | 3.91 | 4.00 | 4.06 |
| 8. | Regret Aversion | 4.779 | 0.009* | 3.75 | 3.96 | 4.00 |
| 9. | Self Control | 0.986 | 0.374 | 3.60 | 3.57 | 3.65 |
| | **All paragraphs of the questionnaire** | 14.704 | 0.000* | 3.50 | 3.66 | 3.73 |

* Means differences are significant at $\alpha = 0.05$

The analysis shows several findings in regard the relation between behavioural biases and the investors' monthly income as follows:

1- Investors' monthly income contribute to the existence of behavioural biases, which are Overconfidence, Loss aversion, Representativeness, Price anchoring, Gambler's fallacy, Availability, Regret Aversion, in investors' investment decision making process.
2- Investors' monthly income does not contribute to the existence of behavioural biases which are Mental Accounting and Self Control
3- The higher the monthly income, the greater the contributions to behavioural biases like Overconfidence, Loss aversion, Representativeness, Price anchoring, Gambler's fallacy, Availability, Regret Aversion.

These findings can be explained as follows:

It is probable that People with high income tend to control their long term financial plans and future goals, so they are not prone to self control bias which affect negatively on investors saving plans. The concept of Self Control and Mental Accounting are related in that if the investor does not have Self Control bias, the investor is not likely to have Mental Accounting bias because not having these two biases means that the investor is aware of his or her financial goals and can achieve them via considering his or her investment portfolio as a whole and not as separate accounts. The practical implications may include rich investors tendency toward committing mistakes related to behavioural biases such as overconfidence, mental accounting and self control. Hence rich investors may incur more losses and trading costs than other investors

# Chapter Five: Findings of the research

- **Introduction**
- **Findings**
- **Conclusion and Comments**
- **Recommendations**

## 5.1 Introduction:

This chapter concludes all the findings of the research which are about the behavioural factors influencing the individual investors' investment decisions in the Palestine Stock Exchange.

The chapter also gives some recommendations to the individual investors at the PSE.

## 5.2 Findings:

The study is summed up by giving all the answers for the research questions raised in **Chapter -1-** . This means that the research objectives are done and the hypotheses are tested. The following part gives the conclusions for the study by presenting the main points to answer the research hypotheses.

**1-** Overconfidence has an impact on individual investment decisions at PSE.

The conclusion in regard to this hypothesis is that individual investors are highly influenced by the overconfidence bias. Consequently, the hypothesis cannot be rejected.

2- Loss Aversion has an impact on individual investment decisions at PSE.

The findings of the research concluded that individual investors in PSE are not affected or impacted by the Loss Aversion bias and that the hypothesis cannot be rejected.

3- Representativeness has an impact on individual investment decisions at PSE.

The findings of the research concluded that individual investors in PSE are moderately affected or impacted by the representativeness bias and that the hypothesis cannot be rejected.

4- Anchoring has an impact on individual investment decisions at PSE.

The research found that individual investors in PSE are moderately affected by the anchoring bias; therefore the hypothesis cannot be rejected.

5- Gambler's fallacy has an impact on individual investment decisions at PSE.

The individual investors at PSE agreed to the field of Gambler's fallacy with a moderate mean. Hence, Gambler's fallacy bias moderately affects the individual investment decisions. Therefore, the hypothesis cannot be rejected.

6- Availability has an impact on individual investment decisions at PSE. The findings of the research concluded that individual investors in PSE are moderately affected or impacted by the Availability bias and that the hypothesis cannot be rejected.

7- Mental Accounting has an impact on individual investment decisions at PSE. The findings of the research concluded that individual investors in PSE are moderately affected or impacted by Mental Accounting bias and that the hypothesis cannot be rejected.

8- Regret Aversion has an impact on individual investment decisions at PSE.

The findings of the research concluded that individual investors in PSE are moderately affected or impacted by the Regret Aversion bias and that the hypothesis cannot be rejected.

9- Self-Control has an impact on individual investment decisions at PSE.

The findings of the research concluded that individual investors in PSE are moderately not affected or impacted by the Self Control bias and that the hypothesis can be rejected.

10- Differences between respondents in age, culture and education do not have an impact on investment decisions at Palestine Stock Exchange.

## 5.3 Conclusion and Comments:

From the prior research, it is found that there is persuasive evidence that investors make major systematic errors and there is evidence that psychological biases affect market prices substantially.

## 5.4 Recommendations:

1) Individual investors in the market should take educational courses in behavioural biases that affect investment decision making in order to be able to manage their portfolios
2) Professionals in consulting and investment management should be exposed to the field of behavioural finance through workshops and seminars such that when decisions are been taken, behavioural finance tendencies will reduce.
3) Information providers in the Palestine Stock Exchange should think of a proper way of releasing information about the market to the public as this have a way of affecting the decision taken by the investor about the market.
4) Collective views on an investment should be applied by fund managers and investors as this has tendencies of reducing individual personal biases on an investment. Formation of committees could be employed, though the use of committees has its own implications.
5) As Shefrin (2000, p. 3) points out, practitioners studying behavioural finance should learn to recognize their own mistakes and those of others, understand those mistakes, and take steps to avoid making them.

## 5.5 Further research:

1- Further research may be specifically directed at some of these issues in undertaking a more nuanced study or to explore why behavioural theories that relate to developed markets are applicable in emerging markets.

2- Research may also be directed towards the investigation of the behaviour of individual investors at the PSE, since individual investors behave differently.

3- Research may be extended into proposing investment models that explain more precisely behavioural factors and biases affecting investment decision making in financial markets.

4- Research may handle the relationship between religion and individual investment decision making.

5- Further research may be needed in the relation between behavioural finance and the influence of market makers on setting prices.

# APPENDICES

- **Appendix (1): list of tables**
- **Appendix (2): Arabic version of the questionnaire**
- **Appendix (3): English version of the questionnaire**
- **Appendix (4): References**

# APPENDIX (1)

**Table 1: Kolmogorov-Smirnov test**

| Field | Kolmogorov-Smirnov | |
|---|---|---|
| | **Statistic** | **P-value** |
| Overconfidence | 0.701 | 0.710 |
| Loss aversion | 0.733 | 0.656 |
| Representativeness | 0.961 | 0.314 |
| Price anchoring | 0.918 | 0.368 |
| Gambler's fallacy | 1.647 | 0.009 |
| Availability | 0.658 | 0.780 |
| Mental Accounting | 1.135 | 0.152 |
| Regret Aversion | 1.072 | 0.201 |
| Self-Control | 0.874 | 0.429 |
| **All paragraphs of the questionnaire** | 0.814 | 0.521 |

**Table 2: Correlation coefficient of each paragraph of "Overconfidence" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I am an experienced investor | .586 | 0.000* |
| 2. | I feel more confident in my own investment opinions over opinions of my colleagues or friends | .599 | 0.000* |
| 3. | I consult others (family, friends or colleges) before making stock purchase | .404 | 0.000* |
| 4. | I use my predictive skills to time the market and to make my port folio performance higher than the market performance | .511 | 0.000* |
| 5. | I trade stocks excessively | .612 | 0.000* |
| 6. | I have stocks in more than one company in Palestine stock exchange | .599 | 0.000* |
| 7. | I have the ability to choose the stocks which its performance will be better than the market performance. | .504 | 0.000* |

* Correlation is significant at the 0.05 level

**Table 3: Correlation coefficient of each paragraph of "Loss aversion" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I am more concerned about a large loss in my stock than missing a substantial gain | .450 | 0.000* |
| 2. | I feel nervous when large paper losses (price drops) have in my invested stocks | .445 | 0.000* |
| 3. | I will not increase my investment when the market performance is poor | .484 | 0.000* |
| 4. | When it comes to investment, no loss of capital (invested money) is more important than returns (profits) | .429 | 0.000* |
| 5. | I sell stocks that increased in value very quickly | .307 | 0.000* |
| 6. | I keep stocks that decreased in value for long time | .463 | 0.000* |

* Correlation is significant at the 0.05 level

**Table 4: Correlation coefficient of each paragraph of "Representativeness"**

**and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I tried to avoid investment in companies with a history of poor earnings | .704 | 0.000* |
| 2. | I rely on past performance to buy stocks because I believe that good performance will continue | .593 | 0.000* |
| 3. | Good stocks are firms with past consistent earnings growth | .661 | 0.000* |
| 4. | I buy hot stocks and avoid stocks that performed poorly in the near past. | .465 | 0.000* |

* Correlation is significant at the 0.05

**Table 5: Correlation coefficient of each paragraph of "Price anchoring" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I compare the current stock prices with their recent year high and low price to justify my stock purchase. | .591 | 0.000* |
| 2. | I am likely to sell my stock after the price hits recent year high | .484 | 0.000* |
| 3. | I am unlikely to buy a stock if it was more expensive than last year | .580 | 0.000* |
| 4. | I see the stock price as high if the price has increased to the current year high | .598 | 0.000* |
| 5. | I believe that the position of the year high and low price determined the current stock price movement range. | .664 | 0.000* |
| 6. | I use the stock purchase price as a reference point for trade. | .558 | 0.000* |

**Table 6: Correlation coefficient of each paragraph of "Availability" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | If I heard from a friend about a stock that achieved high returns, I would buy it. | .589 | 0.000* |
| 2. | If I want to invest in the stocks of a certain company, I will rely on my coworkers opinions | .612 | 0.000* |
| 3. | If I want to invest in the stocks of a certain company, I will rely on information from the internet | .613 | 0.000* |
| 4. | If I want to invest in the stocks of a certain company, I will rely on information from the same company | .660 | 0.000* |
| 5. | If I want to invest in the stocks of a certain company, I will rely on information from financial experts | .496 | 0.000* |
| 6. | If a friend advised me to purchase a stock of certain company then news arrived me about the probability of that stock's price rising, I will invest in these stocks. | .536 | 0.000* |

**Table 7: Correlation coefficient of each paragraph of "Mental Accounting" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I tend to treat each element of your investment portfolio separately | .707 | 0.000* |
| 2. | I hesitate selling stocks that had high returns in the past even though their prices decrease nowadays | .669 | 0.000* |
| 3. | I don't care about the performance of my investment portfolio as a whole but I care about the return of each account separately | .703 | 0.000* |

**Table 8: Correlation coefficient of each paragraph of "Regret Aversion" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I keep the stocks that decreased in value and I don't sell them | .545 | 0.000* |
| 2. | I sell the stocks that increased in value faster | .651 | 0.000* |
| 3. | I invest in companies with low risks | .530 | 0.000* |
| 4. | I don't buy the stocks that decreased in value | .609 | 0.000* |
| 5. | I buy the stocks that a group of investors | .677 | 0.000* |

**Table 9: Correlation coefficient of each paragraph of "Self Control" and the total of this field:**

| No. | Paragraph | Pearson Correlation Coefficient | P-Value (Sig.) |
|---|---|---|---|
| 1. | I can achieve profits out of my stocks by consulting expert always. | .654 | 0.000* |
| 2. | If I believe that some details about certain stock are not available to me, I don't buy that stock. | .627 | 0.000* |
| 3. | Whatever my investment goals are in stock exchange, I can achieve them | .528 | 0.000* |
| 4. | I care about spending on my daily obligations more than caring about saving for the future | .199 | 0.000* |
| 5. | I divide my money to capital for investment and money for daily spending | .554 | 0.000* |

# Appendix (2)

## Questionnaire: Arabic version

Higher Studies department
Commerce Faculty
Business Administration

الدراسات العليا
كلية التجارة
قسم إدارة الأعمال

# Behavioral Factors influencing investment decision making: an empirical study of Palestine Stock Exchange.

# العوامل السلوكية المؤثرة على عملية اتخاذ القرارات الاستثمارية: دراسة تطبيقية في سوق فلسطين للأوراق المالية.

**Prepared by: Sahar Mohammed Abu Nada**

**Supervised by: Dr: Faris Abu Moa'mer**

**مقدمة:**

**تهدف الباحثة لدراسة العوامل السلوكية النفسية التي تؤثر على عملية اتخاذ القرارات الاستثمارية لدى المستثمرين الأفراد في سوق فلسطين للأوراق المالية والتي قد تؤثر على قراراتهم بالبيع أو الشراء في أسهم الشركات المدرجة في السوق .**

**فالرجاء التكرم بإجابة الأسئلة التالية :**

**I. المعلومات الشخصية:**

**١. الجنس ☐ ذكر ☐ اثني**

**٢. العمر**

| | | | | |
|---|---|---|---|---|
| ☐ ١٨- ٢٥ | ☐ ٢٦- ٣٥ | ☐ ٣٦- ٤٥ | ☐ ٤٦- ٥٥ | ☐ فوق ٥٥ |

**٣. الحالة الاجتماعية ☐ أعزب ☐ متزوج ☐ مطلق**

**٤. مستوى التعليم**

| | | | | | |
|---|---|---|---|---|---|
| الثانوية العامة وأقل | ☐ | غير خريج | ☐ | بكالوريوس | ☐ |
| ماجستير | ☐ | دكتوراه | ☐ | أخرى | ☐ |

**٥. سنوات العمل**

| | | | | | |
|---|---|---|---|---|---|
| أقل من ٥ سنوات | ☐ | ٥- ١٠ سنوات | ☐ | فوق ١٠ سنوات | ☐ |

٦. ما هي المدة التي حضرت فيها إلى سوق فلسطين للأوراق المالية

| | | | | | |
|---|---|---|---|---|---|
| أقل من سنة | ☐ | سنة – أقل من ٣ سنوات | ☐ | ٣ – أقل من ٥ سنوات | ☐ |
| ٥– أقل من ١٠ سنوات | ☐ | فوق ١٠ سنوات | ☐ | | |

٧. هل درست أي دورة في سوق الأوراق

☐ أجل ☐ ليس بعد

| المفـــــــــــــــــهوم | موافق بشدة | موافق | موافق بدرجة متوسطة | غير موافق | غير موافق بشدة |
|---|---|---|---|---|---|
| ١- الثقة الزائدة | | | | | |
| ١. أنا مستثمر خبير | | | | | |
| ٢. أشعر بالثقة في قراراتي الاستثمارية أكثر من ثقتي في وجهات نظر أصدقائي وزملائي. | | | | | |
| ٣. أقوم باستشارة الآخرين (عائلة، أصدقاء، أو زملاء) قبل القيام بشراء أسهم. | | | | | |
| ٤. أستخدم مهاراتي التنبؤية في توقيت السوق و جعل أداء محفظتي الاستثمارية أعلى من أداء السوق ككل. | | | | | |
| ٥. أقوم ببيع وشراء الأسهم بشكل مبالغ فيه. | | | | | |
| ٦. أقوم بتنويع الأسهم في محفظتي الاستثمارية | | | | | |
| ٧. أنا أعتقد أن لدي القدرة على اختيار الأسهم التي سوف | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| يكون أداؤها أعلى من أداء السوق | | | | | |
| ٢- تجنب الخسارة | | | | | |
| ١. أشعر بقلق من الخسارة الكبيرة في أسهمي أكثر من قلقي من ضياع فرصة للربح | | | | | |
| ٢. أشعر بالتوتر و العصبية عندما تنخفض الأسعار في أسهمي المستثمرة. | | | | | |
| ٣. لا أزيد من استثماري عندما يكون أداء السوق ضعيفاً | | | | | |
| ٤. عندما آخذ استثماري بعين الاعتبار لا اشعر أن رأس المال المستثمر أهم من الأرباح. | | | | | |
| ٥. أبيع الأسهم الرابحة وأحتفظ بالأسهم التي انخفضت قيمتها في السوق. | | | | | |
| ٦. أتمسك بالأسهم التي انخفضت قيمتها لمدة طويلة. | | | | | |
| ٣- التمثيل | | | | | |
| ١. أحاول تجنب الاستثمار في شركات لها تاريخ في تحقيق الأرباح الضعيفة. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| ٢. اخذ بالاعتبار الأداء الماضي لأسهم الشركة التي أريد شراء أسهمها لأني أعتقد أن الأداء الجيد يستمر في المستقبل | | | | | |
| ٣. أعتقد أن الأسهم الجيدة هي ملك لشركات ذات تاريخ ثابت من نمو المكاسب (الأرباح). | | | | | |
| ٤. أشتري الأسهم التي عليها طلب عالي وأتجنب شراء الأسهم التي كان أدائها ضعيفاً في الماضي القريب. | | | | | |
| ٥. أستخدم تحليل الاتجاه لاتخاذ قراراتي في شراء أو بيع الأسهم. | | | | | |
| ٤- الاعتماد على السعر | | | | | |
| ١. أقارن أسعار الأسهم الحالية مع أعلى سعر أو أدنى سعر لها خلال السنة الماضية حتى أبرر شرائي للأسهم. | | | | | |
| ٢. من المحتمل أن أبيع أسهمي بعد أن تصل إلي أعلى سعر قد وصلت له السنة الماضية. | | | | | |
| ٣. ليس من المحتمل أن أشترى سهم إذا كان سعره أغلى من | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| السنة الماضية. | | | | | |
| ٤. أنا أرى سعر السهم مرتفعاً إذا كان السعر زاد ووصل إلى أعلى سعر له في خلال السنة. | | | | | |
| ٥. أنا أعتقد بأن أعلى سعر و أدنى سعر للأسهم خلال السنة الماضية تحدد المدى الذي يتحرك فيه سعر السهم الحالي. | | | | | |
| ٦. بيعي وشرائي للأسهم يتأثر بالتجارب الحديثة لي في السوق. | | | | | |
| ٧. استخدم سعر الشراء للأسهم كنقطة مرجعية في المتاجرة. | | | | | |
| ٥- وهم المقامر | | | | | |
| ١. أنا قادر وبشكل عادي أن أتوقع نهاية عوائد السوق سواء كانت جيدة أو سيئة في البورصة. | | | | | |
| ٦- الإتاحة | | | | | |
| ١. إذا سمعت من صديقي في سوق الأوراق المالية عن أن سهما يحقق عوائد مرتفعة فاني سأقوم بشرائه. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| ٢. إذا أردت الاستثمار في أسهم شركة ما فاني سوف اعتمد غالبا على آراء ونصائح زملاء العمل. | | | | | |
| ٣. إذا أردت الاستثمار في أسهم شركة ما فاني سوف اعتمد غالبا على المعلومات من الانترنت أو التلفزيون. | | | | | |
| ٤. إذا أردت الاستثمار في أسهم شركة ما فاني اعتمد غالبا على معلومات من الشركة نفسها. | | | | | |
| ٥. إذا أردت الاستثمار في أسهم شركة ما فاني اعتمد غالبا على معلومات من خبراء ماليين. | | | | | |
| ٦. إذا أردت الاستثمار في أسهم شركة ما فاني اعتمد غالبا على تحليلي الشخصي. | | | | | |
| ٧. إذا أردت الاستثمار في أسهم شركة ما فاني اعتمد غالبا على الأداء المالي الماضي للشركة. | | | | | |
| ٨. إذا نصحني صديق بشراء سهم شركة معينة ثم وصلتني أنباء عن احتمال ارتفاع سعر السهم فاني سأستثمر في أسهم الشركة. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| ٧- الحسابات العقلية | | | | | |
| ١. أنا أميل إلى أن أعامل كل حساب في محفظتي الاستثمارية بشكل منفصل. | | | | | |
| ٢. أشعر بتردد في بيع الأسهم التي حققت أرباحا عالية يوما ما رغم انخفاض أسعارها حالياً. | | | | | |
| ٣. أنا لا أهتم بأداء المحفظة الاستثمارية ككل ولكن أهتم لعائد كل حساب على حدة. | | | | | |
| ٨- تجنب الندم | | | | | |
| ١. أنا احتفظ بالأسهم التي انخفضت قيمتها و لا أقوم ببيعها. | | | | | |
| ٢. أنا أبيع الأسهم التي ارتفعت قيمتها بشكل أسرع. | | | | | |
| ٣. أستثمر في أسهم شركات ليس فيها مخاطرة كبيرة. | | | | | |
| ٤. لا أشترى أسهما قد انخفضت قيمتها. | | | | | |
| ٥. أشتري الأسهم التي يقوم بشرائها جماعة من المستثمرين في السوق. | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **٩- السيطرة على الذات** | | | | | |
| **١. استطيع تحقيق الأرباح من أسهمي في السوق عن طريق استشارة الخبراء دائما.** | | | | | |
| **٢. إذا اعتقدت بان بعض التفاصيل عن سهم شركة معينة ليست لدي فاني لا أقوم بشراء الأسهم.** | | | | | |
| **٣. مهما كانت أهدافي الاستثمارية في سوق الأوراق فاني استطيع تحقيقها.** | | | | | |
| **٤.لا اهتم بالادخار للمستقبل بقدر اهتمامي بالإنفاق على التزاماتي اليومية.** | | | | | |
| **٥. أنا اقسم مالي إلي رأسمال للاستثمار و مال للإنفاق اليومي.** | | | | | |

**نشكر لكم حسن تعاونكم**

## Appendix (3)

## Questionnaire: English version

**Higher Studies department**

**Commerce Faculty**

**Business Administration**

**الدراسات العليا**

**كلية التجارة**

**قسم إدارة الأعمال**

# Behavioral Factors influencing investment decision making: an empirical study of Palestine Stock Exchange.

# العوامل السلوكية المؤثرة على عملية اتخاذ القرارات الاستثمارية: دراسة تطبيقية في سوق فلسطين للأوراق المالية.

**Prepared by: Sahar Mohammed Abu Nada**

**Supervised by: Dr: Faris Abu Moa'mer**

Personal information

1. Gender ☐ Male ☐ Female
2. Age

| | | | |
|---|---|---|---|
| ☐ 18 – 25 | ☐ 26 - 35 | ☐ 36 - 45 | ☐ Over 55 |
| ☐ 46-55 | | | |

3. Education level

| | | | | | |
|---|---|---|---|---|---|
| High school and lower | ☐ | Diploma | ☐ | Bachelor | ☐ |
| ☐ | Higher studies | ☐ | | | |

4. How long have you attended the stock market

| | | | | | |
|---|---|---|---|---|---|
| 1-under 3 years | ☐ | 3- under 5 years | ☐ | 5 years and more | ☐ |

5. Have you attended any course of Stock Exchange

☐ Yes ☐ Not yet

6. Please estimate your average monthly income ($)

| | | | | | |
|---|---|---|---|---|---|
| 1000 | ☐ | 1001-2000 | ☐ | 2001-3000 | ☐ |
| 3001-4000 | ☐ | More than 4000 | ☐ | | |

| Concept | Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
|---|---|---|---|---|---|
| **I. Overconfidence** | | | | | |
| 1. I am an experienced investor | | | | | |
| 2. I feel more confident in my own investment opinions over opinions of my colleagues or friends | | | | | |
| 3. I consult others (family, friends or colleges) before making stock purchase | | | | | |
| 4. I use my predictive skills to time the market and to make my port folio performance higher than the market performance | | | | | |
| 5. I trade stocks excessively | | | | | |
| 6. I have stocks in more than one company in Palestine stock exchange | | | | | |
| 7. I have the ability to choose the stocks which its performance will be better than the market performance. | | | | | |
| **II. Loss aversion** | | | | | |
| 8. I am more concerned about a large loss in my stock than missing a substantial gain | | | | | |
| 9. I feel nervous when large paper losses (price drops) have in my invested stocks | | | | | |
| 10. I will not increase my investment when the market performance is poor | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 11. When it comes to investment, no loss of capital (invested money) is more important than returns (profits) | | | | | |
| 12. I sell stocks that increased in value very quickly | | | | | |
| 13. I keep stocks that decreased in value for long time | | | | | |
| **III. Representativeness** | | | | | |
| 14. I tried to avoid investment in companies with a history of poor earnings | | | | | |
| 15. I rely on past performance to buy stocks because I believe that good performance will continue | | | | | |
| 16. Good stocks are firms with past consistent earnings growth | | | | | |
| 17. I buy hot stocks and avoid stocks that performed poorly in the near past. | | | | | |
| **IV. Price anchoring** | | | | | |
| 18. I compare the current stock prices with their recent year high and low price to justify my stock purchase. | | | | | |
| 19. I am likely to sell my stock after the price hits recent year high | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 20. I am unlikely to buy a stock if it was more expensive than last year | | | | | |
| 21. I see the stock price as high if the price has increased to the current year high | | | | | |
| **22.** I believe that the position of the year high and low price determined the current stock price movement range. | | | | | |
| **23.** I use the stock purchase price as a reference point for trade. | | | | | |
| **V. Gambler's fallacy** | | | | | |
| 24. I can normally expect the end of the market returns whether they are good or bad. | | | | | |
| **VI. Availability** | | | | | |
| 25. If I heard from a friend about a stock that achieved high returns, I would buy it. | | | | | |
| 26. If I want to invest in the stocks of a certain company, I will rely on my coworkers opinions | | | | | |
| 27. If I want to invest in the stocks of a certain company, I will rely on information from the internet | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 28. If I want to invest in the stocks of a certain company, I will rely on information from the same company | | | | | |
| 29. If I want to invest in the stocks of a certain company, I will rely on information from financial experts | | | | | |
| 30. If a friend advised me to purchase a stock of certain company then news arrived me about the probability of that stock's price rising, I will invest in these stocks. | | | | | |
| **VII. Mental Accounting** | | | | | |
| 31. I tend to treat each element of your investment portfolio separately | | | | | |
| 32. I hesitate selling stocks that had high returns in the past even though their prices decrease nowadays | | | | | |
| 33. I don't care about the performance of my investment portfolio as a whole but I care about the return of each account separately | | | | | |
| **VIII. Regret Aversion** | | | | | |
| 34. I keep the stocks that decreased in value | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| and I don't sell them | | | | | |
| 35. I sell the stocks that increased in value faster | | | | | |
| **36.** I invest in companies with low risks | | | | | |
| 37. I don't buy the stocks that decreased in value | | | | | |
| 38. I buy the stocks that a group of investors | | | | | |
| **IX. Self Control** | | | | | |
| 39. I can achieve profits out of my stocks by consulting expert always. | | | | | |
| 40. If I believe that some details about certain stock are not available to me, I don't buy that stock. | | | | | |
| 41. Whatever my investment goals are in stock exchange, I can achieve them | | | | | |
| 42. I care about spending on my daily obligations more than caring about saving for the future | | | | | |
| 43. I divide my money to capital for investment and money for daily spending | | | | | |

# REFERENCES


1. (n.d.). Retrieved 2013, from : http://www.pex.ps/PSEWebSite/English/AboutPSE.aspx?TabIndex=0

2. (Uri Gneezy, B. R.-G. (2004). Measuring Lying Aversion. *Journal of Economic Behavior and Organization*.

3. (2011). *European Journal of Economics, Finance and Administrative Sciences*.

4. Abu-Rub, N., & Sharba, T. (2010). Calender Effects in the Palestine Securities Exchange ( PSE): Analysis and Investigation.

5. Abushammala, N., & Sami. (2011). Testing the Weak Form Efficiency of Palestine Exchange. *International Journal of Economics and Finance*, 244-253.

6. Agha Jahanzeb, S. M.-u.-R. (2012). Implication of Behavioral Finance in investment decision-making process. *Business and Management Review Vol. 2(8)*, 01 – 04.

7. Akintoye, I. a. (2007). Effect of Misinterpretation in an Informational Efficient Marke. *European Journal of Finance*.

8. Avanidhar, S. (2007). Behavioral Finance: A review and Synthesis. *European Financial Management, Vol. 14, No. 1*, 12–29.

9. Azeez, B., & Sulaiman, L. (2012). CAPITAL MARKET EFFICIENCY: A Test of the Strong Form in Nigeria. *Australian Journal of Business and Management Research*.

10. Baghdadabad, M. R., Tanha, F. H., & Halid, N. (20111). A study on small investors' behavior in choosing

stock. *African Journal of Business Management*, 11083-11092.

11. Baily, W., Alok, K., & Ng, D. (2011). Behavioral biases of mutual fund investors . *Journal of Financial Economics*.

12. Baker, H. K. (October 5, 2010). *Behavioral Finance: Investors, Corporations, and Markets.*

13. Baker, K., & Nofsinger, J. (2009). *Behavioral Finance*.

14. Barber, B. a. (2001). Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics*, 261-292.

15. Barber, B. M. (2008). All that glitters: the effect of attention on the buying behavior of individual and institutional investors. *Review of Financial Studies*, 785–818.

16. Barberies, N., & Huang, M. (2001). Metanl Accounting, Loss Aversion and Individual Stock Returns. *Natioal Bureau of Economic Research ;Working Paper 8190*.

17. BARBERIS, N. A. (1998). A Model of investor sentiement. *Journal of Financial Economics,*, 307-343.

18. BARBERIS, N. a. (2001). Mental Accounting, Loss Aversion and Individual Stock Returns. *The Journal of Finance,*, 1247-1292.

19. Barberis, N. S. (1998). A model of investor sentiment. *Journal of Financial*, 307Ð343.

20. Baron, R. A., & Byrne, D. (1997). *Social Psychology.* Boston, MA: Allyn and Bacon.

21. Belotti, H. S. (2007). Behavioral Finance: Biases, Mean–. *Journal of Finance*.

22. Benartzi, S. a. (1995). Myopic Loss Aversion and the Equity Premium Puzzle. *Quarterly Journal of*

*Economics*, 73-92.

23. Benartzi, S., & Thaler, R. (1995). Myopic Loss Aversion and the Equity Premium Puzzle. *Quarterly Journal of Economics*, 73-92.

24. Bergen, J. (2013). *Forbs*. Retrieved july 2013, from Investopedia: http://www.forbes.com/sites/investopedia/2011/01/12/efficient-market-hypothesis-is-the-stock-market-efficient/

25. Bergen, J. V. (2011). *Efficient Market Hypothesis: Is The Stock Market Efficient?* Retrieved May 30, 2013, from Investopedia: http://www.investopedia.com/articles/basics/04/022004.asp

26. Bernéus, H., Sandberg, C., & Wahlbeck, D. (2013). Behavioral Finance – Investors' Rationality.

27. Bhandaria, G., Hassaneinb, K., & Deaves, R. (2008). Debiasing investors with decision support systems: An experimental investigation. *Decision Support Systems*, 399–410.

28. Chandra, A. (2008). Decision Making in the Stock Market: Incorporating Psychology with Finance. *National Conference on Forecasting Financial Markets of India, 2008* .

29. Chandra, A. (2008). DECISION-MAKING IN THE STOCK MARKET: INCORPORATING PSYCHOLOGY WITH FINANCE. *Journal of Finance*.

30. Chandra, A., & Kumar, R. (2011). Determinants of Individual Investor Behaviour: An Orthogonal Linear Transformation Approach. *MPRA_paper_29722.pdf*.

31. Chen G, K. K. (2007). Trading Performance, Disposition Effect,Overconfidence, Representativeness Bias,and Experience of Emerging Market Investors. *Journal of Behavioral Decision Making*, 425-451.

32. Chen, G. K. (2007). Trading performance, disposition effect, overconfidence representativeness bias, and experience of emerging market investors. *Journal of Behavioral Decision Making*.

33. Cherry, K. (2013). *About Psychology*. Retrieved April 20, 2013, from Availability Heuristic: http://psychology.about.com/bio/Kendra-Cherry-17268.htm

34. Chip Heath, S. H. (1999). Psychological factors and stock option exercise. *Quarterly Journal of Economics*, 227-271.

35. Chira, I. (August 2008). Behavioral Bias Within The Decision Making Process. *Journal of Business & Economics Research Volume 6, Number 8*.

36. Chira, I., Adams, M., & Thoronton, B. (2008). Behavioral Bias Within The Decision Making Process. *Journal Of Business & Economics Research*.

37. Chun, W., & Ming, L. (2007). "Investor behavioure and Decision Making Style: A Malaysian perspective". 3-14.

38. Cooper, M., Dimitrov, O., & Rau, P. R. (2001). *Journal of Finance*, 2371-2388 .

39. CURTIS, G. (2004). Modern Portfolio Theory and Behavioral Finance. *THE JOURNAL OF WEALTH MANAGEMENT*, 16-22.

40. Daniel, K. D. (1998). Investor Psychology and Security Market Under- and Over-Reactions. *Journal of Finance*, 1839-1886.

41. Daniel, K. D. (2001). Covariance Risk, Mispricing, and the Cross-section of Security Returns. *Journal of Finance*.

42. Daniel, K. H. (2002). Investor Psychology In Capital Markets: Evidence And Policy Implications. *Journal of Monetary Economics*, 139–209.

43. Daniel, k., & Titman, s. (2000). Market effeciency in an irrational world. *Working paper 7489.National Bureau of Econimic Research (NBER)*.

44. Dargham, N. A. (2009). The implications of Behavioral Finance. *Journal Of Economics*.

45. De Bondt, W. F. (1985). Does the Stock Market overreact. *The Journal of Finance*, 793-805.

46. DeBondt, W. T. (1995). Does the stock market overreact? *Journal of Finance*, 793-805.

47. DeBondt, W. T. (1995). Financial decision-making in markets and firms:a behavioral perspective. *Elsevier*, 385-410.

48. Deuskar, P. J. (2012). effect of regret. *Review of Financial Studies*.

49. Deuskar, P., Deng, P., Weisbenner, S. J., & Wu, F. (2012). The Effect of Regret. *25th Australasian Finance and Banking Conference* .

50. Dittrich, D., Güth, W., & Maciejovsky, B. (2005). Overconfidence in investment decisions: An experimental approach. *The European Journal of Finance*.

51. Dominic D. P. Johnson, J. H. (22 Sep 2009). The Evolution of Overconfidence.

52. Evans, A., Dillon, K., Goldin, G., & Krueger, J. (2011). Trust and self-control: The moderating role of the default. *Judgment and Decision Making*, 697-705.

53. Evans, W. D. (2005). Bidding and overconfidence in experimental financial markets. *The journal of*

*behavioral finance*, 108-120.

54. Fama, E. F. (1 September 1998). Market efficiency, long-term returns, and behavioral finance. *Journal of Financial Economics Volume 49, Issue 3*, Pages 283–306.

55. FAMA, E. F. (1998). Market Efficiency, Long-Term Returns, and Behavioral Finance. *Journal of Financial Economics,*, 283-306.

56. Fama, F. (September/October(reprinted January - February 1995). Random Walks in Stock Market Prices. *Financial Analysts Journal*.

57. Fischer, R., & Gerhardt, R. (2007). Investment Mistakes of Individual Investors and the Impact of Financial Advice. *20th Australasian Finance and Banking Conference* .

58. Fischer, R., & Gerhardt, R. (2007). Investment Mistakes of Individual Investors and the Impact of Financial Advice. *20th Australasian Finance and Banking Conference* .

59. Frieder, L. (2004). Evidence on Behavioral Biases in Trading Activity. 2-58.

60. G. Sevil, M. S. (2007). Small Investor Behaviour in Istanbul Stock Exchange (ISE). *Middle Eastern Finance and Economics*, 74-79.

61. Gervais, S. &. (2001). Learning to be overconfident. *Review of Financial Studies*, 1-27.

62. Gervais, S. (2009). Behavioral Finance:Capital Budgeting and Other Investment Decisions. *Review of financial Studies*.

63. Gervais, S. (2009). Behavioral Finance:Capital Budgeting and Other Investment Decisions. *Behavioral Finance*.

64. Gervais, S. (2009). Behavioral Finance:Capital Budgeting and Other Investment Decisions. *Behavioral Finance*.

65. Gokul Bhandari, K. H. (2011). Debiasing Investors with Decision Support Systems:Debiasing Investors with Decision Support Systems:. 1-33.

66. Gokul Bhandaria, K. H. (n.d.). Debiasing Investors with Decision Support Systems:An Experimental Investigation.

67. Goldberg, J. ,. (2001). *Behavioural Finance.* Wiely.

68. Goldberg, J. a. (2001). *Behavioral Finance.* Chichester: FinanzBuch Verlag GmbH.

69. GONGMENG CHEN, K. A. (2007). Trading Performance, Disposition Effect,Overconfidence, Representativeness Bias and Experience of Emerging Market Investors. *Journal of Behavioral Decision Making*, 425–451.

70. Gunay, S. G., & Demirel, E. (2011). Interaction between Demographic and Financial Behavior Factors in Terms of Investment Decision Making. *International Research Journal of Finance & Economics*.

71. Herschberg, M. (2012). Limits to Arbitrage: An introduction to Behavioral Finance and a Literature Review. *Palermo Business Review*.

72. Herschberg, M. (2012). Limits to Arbitrage: An introduction to Behavioral Finance and a Literature Review. *Palermo Business Review*.

73. Hoguet, G. (2005). How the World Works. *Behavioral Finance and Investing in Emerging Markets*.

74. James Felton, B. G. (2003). Preference for Risk in Investing as a Function of Trait Optimism and Gender. *The journal of behavioral finance*, 33-40.

75. Jensen, M. C. (1987). Some Anomalous Evidence Regarding Market Efficiency. *Journal of Financial Economics*, 95-101.

*76. Jeremy Siegel - Efficient Market Theory and the Recent Financial Crisis* . (n.d.). Retrieved august 8/11/2012, 2012, from you tube: http://www.youtube.com/watch?v=8mT-JOqTIMk&feature=related

77. John Ameriks, A. C. (2004). Measuring Self-Control.

78. Kadariya, S. (2012). Factors affecting investor decision making: A case of Nepalese capital market. *Journal of Research in Economics and International Finance*, 16-30.

79. Kahneman, D. (2003). Maps of bounded rationality: psychology for behavioral economics. *The American Economic Review*, 1449–75.

80. Kahneman, D. a. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. 48-81.

81. Kahneman, D. a. (2002). Representativeness revisited: Attribute substitution in intuitive judgment. *Heuristics & Biases: The Psychology of Intuitive Judgment*, pp. 49-81.

82. Kahneman, D. S. (1982). *Judgment Under Uncertainty: Heuristics and Biases.* New York: Cambridge University Press.

83. Kahneman, D., & Tversky, A. ((Mar., 1979)). Prospect Theory: An Analysis of Decision under Risk. *Econometrica, Vol. 47, No. 2*, pp. 263-292.

84. Kahneman, D., & Tversky, A. (1974). Judgment under uncertainty: Heuristics and Biases. *Science*, 1124–1131.

85. Kamstra, M. J., & Kramer, L. A. (September 2000,). Losing Sleep at the Market: The. *American Economic*, pp.1005-11.

86. Kaneko, H. (2004). Individual investors and investments trusts.

87. Karz, G. (2012). The Efficient Market Hypothesis and Random Walk Theory. *http://www.investorhome.com/emh.htm*.

88. Karz, G. (n.d.). *The Efficient Market Hypothesis and Random Walk Theory*. Retrieved October 2013, from http://www.investorhome.com/emh.htm

89. Kliger, D., & Kudryavtsev, A. (2010). The availability heuristic and investors' reaction to company-specific events. *The journal of behavioral finance*, 50-65.

90. Kuo, M.-H., Kuo, N.-F., Chiu, Y.-C., & Fan, P.-H. (2005). Gender and Investment Behavior: on Taiwanese Individual Investors. *Journal of Financial Studies*.

91. Lichtenstein, S. a. (1982). Calibration of probabilities: the state of the art to 1980. *In: Kahneman, Daniel and Slovic, Paul and Tversky, Amos, (eds.) Judgment under uncertainty: heuristics and biases*, pp. 306-334.

92. Lin, H.-W. (2011). Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market. *African Journal of Business Management Vol. 5(5),*, 1630-1641.

93. Lin, H.-W. (2011). Elucidating rational investment decisions and behavioral biases: Evidence from the

Taiwanese stock market. *African Journal of Business Management Vol. 5(5)*, 1630-1641.

94. Lin, H.-W. (2011). Elucidating rational investment decisions and behavioral biases: Evidence from the Taiwanese stock market. *African Journal Of Business Management*, 1630-1641.

95. Luong, L. P., & Thu Ha, D. T. (2011). BEHAVIORAL FACTORS INFLUENCINGINDIVIDUAL INVESTORS' DECISION-MAKINGAND PERFORMANCEA SURVEY AT THE HO CHI MINH STOCK EXCHANGE.

96. Mahmood, I., Ahmed, H., Khan, A. Z., & Anjum, M. (2011). Behavioural Implication of Investors for Investments in the Stock Market. *European Journal of SOCIAL sciences*, 240-247.

97. Malkiel, B. (2003). The Efficient Market Hypothesis and Its. *Journal of Economic Perspectives*, 59–82.

98. Malkiel, B. (2003). The Efficient Market Hypothesis and Its Critics. *Journal of Economic*, 59–82.

99. Masomi, S. a. (2012). consequences of human behaviors in Economics: the Effects of Behavioral Factors in INvestment decision making in Tehran Stock Exchange.

100 Masomi, S. R., & Ghayekhloo, S. (2011). Consequences of human behaviours' in Economic: the Effects of Behavioural Factors in Investment decision making at Tehran Stock Exchange. *International Conference and Economics Research*, 234-237.

101 Massimo Massa, A. S. ( 2004). Behavioral Biases and Investment.

102 members, r. t. (2005, september 1st). Individual investors. (R. H. Thaler, Ed.) *Advances in behavioral finance, 2*, pp. 543-563.

103 Meyers, D. G. (1994). Exploring Social Psychology. 15-19.

104 Montier, J. (2002). Darwin's Mind: The Evolutionary Foundations of Heuristics and Biases.

105 Montier, J. (2002). Darwin's Mind: The Evolutionary Foundations of Heuristics and Biases.

106 Nau, R. (2007). Advances in Decision Analysis: From Foundations to Applications. *Cambridge University Press*.

107 Naveed, A. (2011). Behavioural Finance : Shaping the Decisions of small Investors of Lahore Stock Exchange. *Inerdisiplinary Journal if Research in Business*, 38-43.

108 Nofsinger, J. R. (2001). The Psychology of Investing.

109 Odean, B. M. (2010). The Courage of Misguided Convictions. *Financial Analysts Journal*, 41–55.

110 Odean, T. (1998). Are investors reluctant to realize their losses? *Journal of Finance*, 1775-1798.

111 ODEAN, T. (1998). Are Investors Reluctant to Realize Their Losses? *The Journal of Finance*, 1775-1798.

112 ODEAN, T. (1999). Do Investors Trade Too Much? *The American Eco-nomic Review*, 1279-1298.

113 Odean, T., & Barber, B. (2000). Trading Is Hazardous to Your Wealth:The Common Stock Investment Performanceof Individual Investors. *THE JOURNAL OF FINANCE*, 773-806.

114 Olsen, R. A. ((Mar. - Apr., 1998)). Behavioral Finance and Its Implications for Stock-Price Volatility. *Financial Analysts Journal*, pp. 10-18.

115 Olsen, R. A. (1998). Behavioral Finance and Its Implications for Stock-Price Volatility. *Financial Analysts Journal*, 10-18.

116 Park, J. (2010). Confirmation Bias, Overconfidence, and Investment Performance: Evidence from Stock Message Boards.

117 Park, J., Konana, P., & Kumar, A. (2010). Confirmation Bias, Overconfidence, and InvestmentPerformance: Evidence from Stock Message Boards. *McCombs Research Paper Series No. IROM-07-10* .

118 Paul Slovic1, E. U. (2002). Perception of Risk Posed by Extreme Events. *Center for Decision Sciences (CDS) Working Paper*.

119 Peterson, R. (2007). Affect and Financial Decision-Making: How Neuroscience can Inform Market Participants. *The Journal of Behavioural Finance* , 1-9.

120 Pompian, M. M. (2006). Incorporating Behavioral Finance into Your Practice. *Journal of Financial Planning*.

121 Rasoul Sadi, H. G. (2011). Behavioral Finance: The Explanation of Investors' Personality and Perceptual Biases Effects on Financial Decisions. *International Journal of Economics and Finance*.

122 Ricciardi, V., & Simon, H. (2001). Behavioural finance:A new perspective for investors and financial professionals. *Working paper*.

123 Sadeghi, M. Y. (n.d.). The Influence of Investor Psychology On Regret Aversion. *journal of finance*.

١٢٤ Samir Safi .(٢٠٠٩) .*An introduction to statistics* .Gaza.

125 Saunders, E. M. (1993). Stock prices and wall street weather. *American Economic Review*, 1337–1345.

126 Seppälä, A. (2009). Behavioral biases of investment advisors - The effect of overconfidence and hindsight bias.

127 Sevil, G. S. (2007). Small Investor Behavior In Istanbul Stock Exchange(ISE). *Eurojournal Publishing, Inc, Middle Eastern Finace And Economics*, 14550-2889.

128 Sewell, M. (2007). Behavioural Finance.

129 Shaheen, Y. (2010). The Percevied Usefulness of Information for Investment Decisions: Evidence from Palestine Securities Exchange[PSE]. *Hebron University Research Journal*, 284-307.

130 Shefrin, H. (2000). "Beyond Fear and Greed: Understanding Behavioral Finance and the Psychology of Investing. *Harvard Business School Press*.

131 Shefrin, H. (2000). Beyond Greed and Fear: Understanding behavioral finance and the psychology of investing. *Harvard Business School Press*.

132 SHEFRIN, H. (2000). Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing. *Financial Management Association Survey and Synthesis Series*.

133 Shefrin, H. (2001). Behavioral Corporate Finance. *Journal of Applied Corporate Finance*, 113-124.

134 Shefrin, H. (2007). Behavioral Finance: Biases, Mean–Variance Returns, and Risk Premiums. *CFA Institute Conference Proceedings Quarterly*.

135 SHEFRIN, H., & STATMAN, M. (1984). EXPLAINING INVESTOR PREFERENCE FOR CASH DIVIDENDS. *Journal of Financial Economics*, 253-282.

136 Shefrin, H., & Statman, M. (1995). Making sense of beata, size, and book-to-market. *Journal of Portfolio Management*, 26-34.

137 Shfrn, H., & Statman, M. (1985). The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence. *The Journal of Finance*, 777-790.

138 Shiller, J. (2003). From efficient markets theory to behavioral finance. *The Journal of Economic Perspectives*, 83-104.

139 Shiller, R. (2013). Retrieved November 2013, from http://www.youtube.com/watch?v=IK-idXz0dhw

140 Shiller, R. J. (1998). Human Behavior and the Efficiency of the Financial System. *NBER Working Papers 6375*.

141 Shiller, R. J. (1999). Human Behavior and the Efficiency of the Financial System. *J.B. Taylor and M. Woodford, eds., Handbook of Macroeconomics, Vol. 1C, Part 6*, pp. 1306-1340.

142 Shiller, R. (May 2010). Using behavioral Finance to Better understand the psychology of Investors. *Institutional Investor*.

143 SHLEIFER, A. (2000). Inefficient Markets: A Introduction to Behavioral Finance. *Oxford: Oxford University Press*.

144 Shleifer, A. (2000). Inefficient Markets: An Introduction to Behavioral Finance. *Oxford University Press, New York*.

145 Shleifer, A. a. (1997). The limits of arbitrage. *Journal of Finance 52*, 35-55.

146 Shleifer, A. a. (1997). The limits to arbitrage. *The Journal of Finance*, 35-55.

147 Shleifer, A. a. (1997). The limits to arbitrage. *The Journal of Finance*, 35-55.

148 Simon, G., & Terrance, O. (2001). Learning to be Overconfident. *Review of Financial Studies*, 1-27.

149 Simon, H. (1957). *models of man.* New York: John Wiley and Sons, Inc.

150 Singh, S. (2012). Investor Irrationality and Self-Defeating Behavior:Insights from Behavioral Finance. *The Journal of Global Business Management*, 116-122.

151 Singh, S. (2012). Investor Irrationality and Self-Defeating Behavior:Insights from Behavioral Finance. *Global Business Management*, 116-122.

152 Suleyman Gokhan Gunay, E. D. (2011). Interaction between Demographic and Financial Behavior Factors in Terms of Investment Decision Making. *International Research Journal of Finance and Economics*, 147-156.

153 Thaler, C. M. (2005). "Overconfidence vs. Market Efficiency in the National Football League. *NBER Working Papers 11270*.

154 Thaler, R. (1999). The End of Behavioral Finance. *Financial Analysts Journal vol. 55, no. 6*, 12-17.

155 Thaler, R. a. (2002). A Survey of Behavioral Finance, Handbook of the Economics of Finance. *National Bureau of Economic Research*.

156 Thaler, R. H. (1981). An Economic Theory of Self-Control. *Journal of Political Economy*, 392-406.

157 THALER, R. H. (1999). Mental Accounting Matters. *Journal of Behavioral Decision Making*, 183-206.

158 Wang, F. A. (2001). Overconfidence, Investor Sentiment, and Evolution. *Journal of Financial Intermediation 10*, 138–170.

159 Yahyazadehfar, M. a. (2008). The Influence of Investor Psychology On Regret Aversion. *Journal of finance*.

160 Yates, J. F. (1990). Judgment and decision making. *Englewood Cliffs, NJ*.

161 Zhu, Y.-J. L.-S.-Y.-P. (n.d.). The Investment Behavior, Decision Factors and Their Effects Toward Investment Performance in the Taiwan Stock Market.