

Can Investors Depend only on Accounting Information in Investment Decision-Making?

¹Imtiaz Badshah, ²Muhammad Ibrahim Khan, ³Amira Khattak,
⁴Zunaira Jalil, ⁵Seema Gul

Abstract--*The purpose of this paper is to understand and analyse the investor's behaviour in investment decision-making in relation to factors other than quantitative ratios. This study is therefore the first of its kind to adopt qualitative method such as an interview guide for collecting data on behavioural factors that may affect the investor's investment decision-making. In total eight detailed interviews were conducted, five with individual and three with institutional investors in Pakistan. Behavioural factors affecting investors' investment decision-making were identified as heuristic biases (such as representativeness, availability, anchoring and overconfidence) and herding behaviour, with the main focus on the former. This research affirmed the presence of heuristic biases and a herding approach among Pakistani investors in relation to investment-related decisions. Interestingly, all four types of heuristic behaviour – representativeness, anchoring, overconfidence and availability bias – are reported among Pakistani investors based on their responses to the questions.*

Key words--*Behaviour, investment, decision, heuristics, herding, stock market*

I. INTRODUCTION

Traditional finance theory suggests that investment decisions are based on complicated technical ratios using the financial statements produced by companies. This is because “in traditional finance theory the risk of an investment is seen as being embodied in the variance of the expected distribution of returns” (Duxbury and Summers, 2004, p. 21). However, it is observed that households or individuals who invest consider multiple factors (including a combination of psychological, individual and economic preferences) rather than only considering technical financial ratios, because risk is understood to mean loss in psychological literature (Duxbury, 2004). As investors are human beings and are subject to internal biases, it is imperative for researchers to include their behavioural biases when analysing their investment decision-making skills. We thus argue that traditional finance cannot provide rational grounds for market anomalies without applying both economics and human psychology. In light of this, the current study aimed to understand and analyse the behavioural factors affecting investment decision-making in Pakistan. The reason for selecting Pakistan is the developing nature of its market and the limited literature available on the behavioural aspects of investors in the context of Pakistan. Moreover, the study attempts to provide an understanding of investors' decision-making behaviour by analysing and comparing both individual and institutional investors.

¹Associate Professor, Faculty of Business, Languages and Social Sciences, Østfold University College Norway imtiaz.badshah@hiiof.no

²Assistant Professor, Institute of Business and Leadership Studies, Abdul Wali Khan University Mardan, Pakistan, abrahimbku@gmail.com

³Assistant Professor, College of Business Administration, Prince Sultan University, Riyadh, Saudi Arabia, akhattak@psu.edu.sa

⁴NUST Business School, National University of Sciences and Technology, Islamabad, Pakistan

⁵Assistant Professor, College of Business Administration, Prince Sultan University, Riyadh, Saudi Arabia, sgul@psu.edu.sa

Finance theory is built on the capital asset pricing model (CAPM) and mean-variance theory, which state that investors optimise their return-risk trade-off by diversifying their investment (Duxbury, 2015). Some theorists, who are staunch supporters of the traditional finance paradigm admit that behavioural and psychological factors are vital in explaining “financial anomalies” Olsen (2010). It is argued that if the rational investment model based on quantitative data is true, then why are so many anomalies present in the market? Furthermore, after a thorough study of investment decisions, it can be noted that there are patterns that cannot be explained by traditional finance theories. This entails a need to study factors (behavioural factors such as human preferences, psychological, individual etc.) other than the quantitative variables affecting investment decision-making.

Even though quantitative models enhanced the level of rationality in investment decisions, the proponents of quantitative techniques argue against the inclusion of the investor’s (as human) subjectivity in investment decision-making. However, eliminating the role of human and emotion in decision-making seems impossible. Human emotions, beliefs and values thereby appear to affect investors’ investment decision-making. Neugebauer (2008) argued that individuals have their own scheme of decision-making process. The process also supports earlier evidence that investors are averse to losses and not variance as illustrated by Duxbury and Summers (2004). This means that individuals do not take complex values such as variance into account, and instead place more emphasis on the losses they may bear in future. Moreover, individual investors find it difficult to construct mean-variance portfolios. This phenomenon shifted the focus of studies from traditional finance theory towards finding a behavioural reason for investors’ investment decisions.

Experiments have been conducted that elucidate behavioural factors that influence decision-making and that violate the criteria of investment decisions highlighted in traditional finance literature based on CAPM and mean variance theory. Huberman and Jiang (2006) provide evidence for the use of diversification heuristics. Baltussen and Post (2011) found that most of the participants in their experiments focused purely on a marginal distribution of assets and ignored the benefits of wider portfolio diversification. Assets that were unattractive in isolation were avoided despite their diversification benefits negatively correlating with other assets in a portfolio. DeBondt and Thaler (1995) find that individual decision-making is influenced by factors other than strong technical values.

The capital market in Pakistan, as an emerging economy, is under-developed and more informal (Arifeen, 2018). As a result, Pakistan is an interesting context because there are different levels of decision-making owing to the differences in the investors’ attitudes and the presence of various market factors. Moreover, there may tend to be more cognitive biases among people in Pakistan, as an Asian country, than among people in Western countries (Kim & Nofsinger, 2008).

In theory, psychologists and behavioural scientists believe that culture plays a vital role in nurturing behavioural biases (Yates, Lee and Bush, 1997). Kim and Nofsinger (2008) go on to explain the behavioural biases arising in different cultures by referring to the cultural aspects of individualism versus collectivism. They state that Asian societies are characterised as socially collective. In these countries, including Pakistan, individuals’ decisions are affected by various people or groups of people. It is thereby common practice to consider consulting family and

friends in investment-related decisions. Furthermore, as a multi-cultural, Pakistan is a diverse mix of ethnicities leading to various types of biases. As the result of this ethnic diversity, Yates et al. (1997) state that investors in Asian economies are prone to more behavioural biases than those in the West. It is thus interesting to investigate the various behavioural factors that influence the decision-making patterns of investors in Pakistan as an Asian country. The aim of the study is therefore to identify the role of heuristic (the tendency of ignoring the information in order to make decisions more quickly, prudently and accurately than when using complex financial methods) and herding bias (following other investors' decision making patterns) in the investment decision-making of Pakistani investors. This research thus aims to understand and analyse the following questions:

- 1) What behavioural factors influence investment decision-making in Pakistan?
- 2) How do these factors influence the decision-making of Pakistani investors?

II. LITERATURE REVIEW

The subjective factors that influence decision-making are essential for determining the actual reasons behind the investor's final decision. People underestimate outcomes that are not certain, and respond differently to similar situations depending on how losses and gains are perceived and understood (Kahneman & Tversky, 1979). The investor's decision-making follows a pattern of economics and psychology, as Duxbury (2015) argues that behavioural factors influence investment decisions. Ritter (2003) states that behavioural finance is based on cognitive psychology, which states that human decision-making processes are subject to many cognitive biases. Olsen (2010) claims that traditional finance researchers use behavioural and psychological factors to explain "financial anomalies". It is thus imperative to study the behavioural factors that affect the investor's decision-making in Pakistan.

2.1 Heuristics

Heuristics refer to a rule of thumb that makes decision-making easier for investors, especially under uncertain circumstances (Ritter, 2003). Gigerenzer and Gaissmaier (2011) define heuristics as a strategy where the investor usually ignores part of the information in order to make decisions more quickly, prudently and accurately than when using complex financial methods. Kahneman and Tversky (1974) identify representativeness, availability and anchoring bias as symptoms of heuristic behaviour. While Waweru (2008) identifies overconfidence bias as part of heuristic behaviour. Otuteye and Siddiquee (2015) refer to such behaviour as mental shortcuts, developed through individual experience of quick and easy decision-making. Moreover, based on their own individual targets, the individual may speed up or slow down the mental shortcut process to make decisions. They may avoid technical information altogether or use it to a certain extent and filter out the remaining unrelated information.

Representativeness refers to the degree to which an event resembles its population (Kahneman and Tversky, 1974). It may result in biases in investment decision-making where people put more emphasis on recent events and incidents than on long-term ratios (Ritter, 2003). For example, if there is a general perception that the winter clothing business will perform well in winter seasons, individuals may invest in such business while ignoring

the future business prospects for summer seasons. Similarly, if a bubble suddenly develops in certain stocks, most investors would like to be part of it, despite knowing that it may soon burst.

It also leads to the presence of factors such as “sample size neglect” where people base their inferences on too small a sample size (Barberis and Thaler, 2003). The practical application of representativeness phenomena can be seen in situations where people tend to invest in ‘hot’ stocks rather than those that perform poorly. This type of individual behaviour helps to explain investors’ overreaction in specific investment situations (DeBondt and Thaler, 1995).

Anchoring refers to situations where people use some initial values to make estimates. These initial estimates, even when based on limited information, provide grounds for biased decisions (Kahneman & Tversky, 1974). Furthermore, individuals have a tendency to stick to their original opinion, giving rise to a phenomenon called anchoring. Despite having ample evidence of the problems related to remaining in their original position, individuals stick to their values and do not investigate further, which leads to uninformed decision-making. In financial markets, value scales are usually fixed by recent observations, thus giving rise to anchoring bias. Financial analysts tend to refer to the initial prices of stock when they are selling or analysing stock performances. As a result, current stock prices are usually determined by previous stock prices. Waweru (2008) states that anchoring and representativeness are related. Both anchoring and representativeness involve people focusing on recent experiences when making investment decisions. Investors are more optimistic when the market rises and pessimistic when the market falls. This behaviour is evident in the Pakistani stock market, where the mood in the market is pessimistic after a fall, and vice versa in the event of a rise.

Overconfidence occurs when people overestimate the reliability of their knowledge and skills (DeBondt & Thaler, 1995). Experienced individuals utilise this phenomenon frequently, as they tend to influence the trends in the market. However, investors may feel diffident in the event of losses and tend to become overconfident in situations of gains. The overconfidence achieved from continuous gain situations may, in future, make the investors blind to other important factors that may result in losses for the investor in different investment scenarios. As argued earlier that investors feel diffident in the event of losses and gains, this trend in investors behavior is termed as regret aversion and loss aversion in prospects theory (Waweru et al., 2008). According to Waweru et al., (2008) regret is an emotion that arises in people’s minds after they have made mistakes. Investors tend to avoid regret by refusing to sell shares that are decreasing in value and being willing to sell shares that are increasing in value (Frydman and Camerer, 2015). It seems that the phenomenon of regret aversion is common in the Pakistani market, as investors in Pakistan perceive loss as being more significant than gains. As a result, investors hold on to stocks in a bid to reverse the loss and usually end up losing more.

Furthermore, investors are more remorseful about holding losing stocks too long than selling those that are winning too soon (Forgel & Berry, 2006), which means that investors look at loss and gain differently. They will resent the fact that they held on to a stock that kept losing more than the fact that they sold a winning stock too soon. Investors thus look at losses and gains differently because they only see losses in the short run (Baltussen and Post,

2011). This results in them holding on to stocks that are no longer profitable, and that, at best, may be sold at the original price.

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Loss aversion is the difference in people's sensitivity to similarly sized losses or gains (Barberis & Thaler, 2003). Barberis and Thaler argue that when faced with a similar level of gains or losses, people are more sensitive to losses than gains. This phenomenon has already been explained above, as investors being more concerned with losses than gains. Loss aversion is a common behaviour that affects investors, but it may result in bad decisions and may therefore impact the investor's wealth (Odean, 1998). Investors may make bad decisions to avoid losses. They avoid taking a risk because they are afraid of losing; thereby missing the opportunity to make a profit.

Availability bias occurs when individuals utilise easily available information excessively in investment decision-making rather than relying on credible financial information. With respect to information gathered from the Pakistan Stock Exchange, it appears that people take and process information that is easily available, e.g. online, and investors make decisions based on this type of information without verifying it. There are a number of issues about using information that may not be verified in connection with investment decisions; however, individual investors may not take these issues into account when making investment decisions. Hence, after critical analysis of the literature on heuristics, the following hypothesis has been developed:

H1: Heuristics (HE) has a positive relationship with Investor Behaviour (IB).

2.2 Herding Effect

The herding effect refers to the tendency of investors' behaviour to follow other investors' decision-making patterns (Spyrou, 2013). Researchers pay attention to the herding effect because people tend to place greater emphasis on collective rather than individual decisions. Investors pay attention to herding because of its impact on stock prices, the attributes of risk and return models influencing the asset pricing theories (Tan et al., 2008). With reference to behaviour, herding causes emotional biases such as conformity, congruity, home bias, cognitive conflict and gossip. Investors prefer this phenomenon because they believe they can extract useful information through herding. In the securities market, investors herd based on the investment decisions of the crowd to buy or sell stocks.

Rational investors, on the other hand, make informed decisions rather than following the crowd, thus correcting the market direction and making it work efficiently. Herding, as opposed to the efficient market hypothesis, may create a state of inefficient market, which is in turn recognised as speculative bubbles.

Caparelli (2004) interestingly compares herding investors to prehistoric men who gather in groups and support each other without having any knowledge of or information about the environment. The elements that affect herding behaviour are overconfidence and volume of investment etc. The more confident investors are the more they rely on their private information for making investment decisions, which means investors are less interested in herding behaviours. There is a difference between individual investors and institutional investors in that individual investors follow the crowd whereas institutional investors do not (Goodfellow et al., 2009). Institutional investors usually have proper mechanisms in place to study market trends and institutional investors' stakes are higher than those of individual investors. Hence, herding behaviour may not be found among institutional investors, but may be at play among individual investors in Pakistan.

Herding can drive stock trading and create momentum for stock trading, but its impact can cease when a certain level is reached because the cost of following the group or herd will increase abnormal returns (Waweru, 2008), which can result in huge losses. For example, if a group of people collectively decide to sell a certain stock, the stock is bound to start losing value. Similarly, collective investment in stocks would result in higher demand for the stock leading to higher returns. Waweru (2008) concludes that investors' decisions to sell and buy are influenced by other individual investors' decisions. Such collective decisions help investors to develop a sense of regret aversion for their decisions. Collective decision-making is one of the basic instincts of human nature. In developing countries such as Pakistan, where the degree of individual independence is low, people constantly rely on each other for support and advice. Herding is a major factor for investors around the world, the degree of its impact may depend on the investor's external environment and personal experiences.

Critical Analysis

Hence, after critical analysis of the literature, the following hypothesis has been developed:

H2: Herding Effect (HE) has a positive relationship with Investor Behaviour (IB).

III. METHODOLOGY

This study is qualitative in nature and in-depth, face-to-face interviews were hence conducted with institutional and individual investors. Investors were thus the unit of analysis. In total eight detailed interviews were conducted, five with individual and three with institutional investors. The study selected Karachi, the financial hub of Pakistan, as the prime location for most of the interviews. The informants were selected based on convenience sampling, taking in to account the busy schedules of equity investors into account. Interviewees were approached through personal contacts, and meetings were arranged at convenient times. Interviews were conducted in person. The sample was selected across the industry from top fund managers to small individual investors. Thus, the selected sample was able to provide the comprehensive views of investors on this study topic.

Each interview was conducted face-to-face and lasted for maximum half an hour due to the busy schedules of the interviewees. In order to protect the confidentiality and maintain the anonymity of the interviewees, each interviewee was assigned a code, for example IND1, IND2 etc. to represent individual investors and II1, II2 and II3 to indicate institutional investors. The interviewees were asked questions that provided views about their own behaviour and their general opinions about the behaviour of Pakistani investors. Only three interviews were digitally recorded and transcribed while the rest of them wished not to be recorded, and notes were therefore taken manually. The interviews were transcribed soon after the interview period. The themes generated from the interviews were mapped against the literature review and reflections on the hypothesis concerning the role of behavioural issues in the investor's decision-making.

IV. DATA AND FINDINGS

Heuristics

On further questioning about stock market volatility, II2 replied that equity markets run on day traders and punctures [uninformed investors], who trade on the basis of information and rumours released to the market on a daily basis and who often lose money. In fact, there is a shortage of genuine investors. Thus, the interviews suggest that market activity relating to disclosures is mostly generated by uninformed individual investors who trade on the basis of any news to make quick earnings.

The next question put to the interviewees concerned their sources of company information. The respondents' answers were very similar with the majority citing financial statements, social and print media, and the company prospectus as their main sources of information. In addition, the institutional investors identified other sources of information such as meetings with the management, analyst briefings and an in-house library that is regularly updated and serves as a one-stop shop for all relevant information. Institutional investors found analyst briefings to be particularly informative, because the senior management respond to all kinds of questions from relevant stakeholders. Thus, the findings reveal that individual investors rely more on traditional sources of information whereas institutional investors rely on both traditional and advanced sources, and more serious (rational) sources of information. In addition, the interviewees' answers suggest that investors in Pakistan have the necessary means at their disposal to obtain access to company information.

In addition to the quantitative aspect, the institutional investors also acknowledge the importance of qualitative aspects such as company management, company sponsors and the political affiliation and qualifications of company owners, and company history. On the other hand, individual investors expressed their preference for quantitative aspects, such as the majority of individual investors having investments in companies with a high pay-out (dividend). When asked about the history of stock prices, the majority of individual informants argued that fundamentals matter, but not independent of history which gives them some idea about the company. As IND 2 went on to say "technical analysis aids approximately 5% of decisions relating to trends in trading".

An important observation that emerged from the correspondents' data is their disagreement on the role of economic conditions for investment decisions. Few informants, especially individual investors, argued that the

economic conditions of the country cannot be ignored in relation to some sectors. However, the majority disagreed, particularly institutional investors, as one fund manager (II3) put it “macro factors do not have such an impact on the stock market, for example the textile sector is one of the biggest sectors in our economy and employs a large number of people, but its weight in the market index is only 2%. In fact, investors state their preference for investment in liquid stock as they are the most actively traded stock. This could be one of the reasons for thin trading in other stocks.”

In the case of trading, the majority of the interviewees indicated that individual sentiments are based on information and information plays a key role in making decisions. As stated by a top fund manager (II2): “Trading is based on rumours, but not investments, which are purely based on fundamentals. One can beat the market as traders, but this depends on information reliability. The market does not only move on fundamentals, but it also reacts to news. Most individual/small investors are day traders who lack knowledge about stock and have a short-term perspective, and therefore end up with accumulated losses. They are high risk takers and enter the market for short gains, but often end up losing their investment. The real investors are the few people who have incentives in terms of information; if you are part of the game you will achieve significant returns.”

The findings suggest that the investment strategies vary for trading and for investment. The investors, in particular institutional investors, make decisions based on fundamentals with minimum reliance on their judgment as they follow the fundamentals and the recommendations of their in-house analyst. Institutional investors are thus bound by investment rules in order to discourage the role of individual behaviour in investment-related decisions. However, with respect to day trading, the investor’s personal judgement, rumours and market mood play a role in investment decisions.

All of the three institutional investors highlighted the importance of the role of financial analysts in making investment decisions, with all three institutional investors mentioning the presence of in-house financial analysts. However, individual investors argue that they rely on their stockbrokers for recommendations.

The issue with forecasts in developing countries such as Pakistan is that they lack reliability. This argument received a mixed response with more institutional investors speaking in favour of financial analysts while individual investors conveyed their doubts about the reliability of forecasts. As one of the institutional investors (II3) put it: “analyst forecasts are free of bias and are independent of industry pressure because an analyst has to defend his forecast based on sound reasoning”. The reason for praising the analyst forecast may be that in Pakistan, one parent company can own a brokerage business, run fund management and investment firms, and may thus avoid criticism. However, individual investors stated that “personally I do not trust financial analyst forecasts because they are aligned with industry or company management. They will never give you the true picture of a company. Every brokerage house has its own ‘commercial angel’” (IND5). Other individual investors complained that brokerage houses only provide advice, but do not share forecasts before actual announcements. This thus confirms the lack of access to analyst forecasts in developing countries such as Pakistan.

However, when asked about the accuracy of analyst forecasts, institutional investors argue that it is easy to forecast earnings in quantified sectors such as cement, automobile, fertiliser, oil and gas, because they update their

sales figures on a monthly basis, but that this is not the case in complicated industries such as the service sector. As one of the institutional investors put it: “It is essential for them to reconcile forecasts against other analyst forecasts. If the earnings deviation is a one-off, we try to identify the discrepancies and what went wrong, and we also contact the company management to identify the factors of deviation, because regular deviations from earnings forecasts will demoralise their clients” (II2).

Herding Effect

All of the interviewees (both institutional and individual investors) acknowledged that although the market moves on expectations, it reacts to actual announcements. IND1, for example, stated that the market moves on expectations, but reacts to actual announcements. In fact, the market develops momentum prior to announcements with the direction set by expectations. However, after announcements, it is the actual earnings that determine the direction of the market based on whether they meet expectations or not. Thus, findings imply that announcements carry information and investors adjust their investment positions based on that information.

However, when asked about their investment decisions, the investors’ responses varied a great deal. The individual investors replied that their reactions vary with the market mood. For example, IND1 stated that deciding whether to invest or divest takes longer if the market is confused, where it otherwise takes seconds. Therefore, it can be assumed that individual reactions depend on the consensus of the market. On the other hand, institutional investors contend that their reactions are not spontaneous and that they prefer to wait for further information. For example, institutional investor II2 argues that “announcements convey partial information, so we never trade without detailed financial statement analysis, which is generally released after ten days in order to identify the key figures”. Furthermore, II1 and II3 argued that their decisions to buy or sell are based on the analyst forecast or research carried out in advance. If the expectations were not met, it takes two to three days or more to adjust investment portfolios. Thus, the results of the interviews point to a conservative approach among institutional investors who take time to change their beliefs, leading to a slow adjustment of stock prices. It also rejects the existence of herding behaviour among institutional investors who rely more on actual facts and fundamentals rather than market trends. If this is the case then market efficiency does not prevail in PSX, because it states that stock prices reflect all information related to it.

When asked about the reason for the delay in action, institutional investors argued that the stocks are highly volatile after industry/company specific announcements and that they therefore wait for the market to settle down. For instance, one of the top institutional investors (II2) stated that “Once disclosures are made, there is generally a sense of anti-climax because the market starts correcting the prices and even good-news firms can suffer a decline in their stock prices. However, if there is momentum in the market, even bad-news firms experience a hike in prices”.

When asked about revising their investment positions in bad-news firms, the institutional investors replied that one-off negative earnings are not worrisome, but that portfolios would certainly have to be adjusted if this was a recurring event. In addition, institutional investors always consider the reasons for negative earnings, as even one-off negative earnings due to fundamental changes in company accounts can lead institutional investors to change

their investment positions. However, the market mood matters more than the nature of earnings for individual investors. Their investment position follows the market trend.

In this section, the researchers explored the investment strategies of stock investors in Pakistan. As reported in literature, the company fundamentals (such as price/earnings ratio, price/book ratio, price/sale ratio, debt/equity ratio, cash flow, pay-out ratio) played an important role in the investment decisions of the interviewees (three institutional investors and one individual investor) as they can earn them significant returns. However, the strategies vary depending on whether the investor is engaging in day trading or investment. There is a difference between trading and investment; trading is short-term whereas investment is long-term (beyond one year). The institutional investors show a greater preference for long-term investment, but also accept that day trading is important for improving their understanding of the dynamics of the market. Individual investors on the other hand show greater interest in trading. It is thus clear from the discussion that institutional investors' decisions are based on long-term objectives. As a fund manager stated, "although history provides ideas about the stock, fundamentals eventually prevail. If you are a day trader you will be at the mercy of perception, sentiments, supply and demand. Creating wealth under such conditions is therefore hard to achieve" (III). This suggests that institutional investors believe more in a buy-and-hold policy rather than day trading. This does not mean that institutional investors are not involved in trading, but the majority of their investments are long term until they achieve the calculated return.

When asked about beating the market in terms of returns. Seventy per cent of the informants replied that it is possible to beat the market, but that this requires investing in liquid stocks. Twenty per cent replied that it is hard to beat the market on a regular basis. There are anomalies in the market however. Overall, investors were optimistic about beating the market in terms of returns but associate this with their decisions.

V. DISCUSSION

Traditional finance which focuses on the efficient market hypothesis assumes that the market is efficient and that no single investor can consistently earn more than market returns. This is explained by the presence of competition in the market among different investors, which drives the prices to the correct value. Moreover, traditional finance claims that market anomalies can be explained through risk premiums associated with firm size, value and growth stock, stock momentum, information asymmetry, risk, profitability and firm growth. However, literature suggests that the multi-factor risk premium (Fama-French three and five factor model) failed to explain various anomalies in global stock markets. This raises an important question: if markets are price efficient, as traditional finance claims, then what caused the recent boom and bust (Boom 2002-2006; Bust, 2007-2010) in the stock markets in developed countries. The answer lies to some extent in behavioural finance, which offers an alternative to the efficient market hypothesis in explaining the market anomalies. Behavioural finance claims that the market can be informationally inefficient due to investor behaviour, which enables competitors to gain significant returns. In light of this, the current study attempts to analyse investor behaviour in investment decision-making.

To understand investment behaviour, it is pertinent to understand that investors at the end of the day are human and are exposed to all kinds of biases that human beings are subjected to. Therefore, there is a need to examine the investor's psychology along economic lines, which is where behavioural finance plays a role. In light of this, the current study conducted interviews to examine the role of investors' behaviour with respect to heuristics and herding bias in their investment-related decision-making. All these behavioural biases are interlinked and, in many ways, act together in an individual based on the specific external conditions.

The responses obtained from the respondents indicate that individual investors' decisions are based on the market flow. In comparison, institutional investors make independent decisions on the basis of facts and figures, regardless of time. The presence of an in-house analyst research team supports the use of quantitative analysis in institutional investor decision-making. This also suggests that the personal role of institutional investors is limited, and that they follow the analyst forecasts for portfolio adjustments. Overall, the study findings reject the presence of herding behaviour in institutional investors but accept its presence among individual investors. One possible explanation that emerges from the respondents' interviews is that individual investors are under-educated and under-informed and believe that following the market trend will earn them significant returns. This provides big investors with an opportunity to lead the small individual investors on and do them out of their investment by suddenly divesting once stock prices reach their desired level. However, individual investors repeatedly fail to realise that the strong bullish trend could be an artificial hike created in the market by big investors. Despite this, individual investors conform to the general approval of the market because of past gains realised by following big investors' trading patterns. The results can be related to the mental accounting concept in the way that individuals classify personal funds differently and are thus more prone to irrational decision-making in their investment behaviour. Another reason could be derived from the fact that the Pakistani stock exchange is in the development stage and exposed to high economic and political uncertainty. Small individual investors therefore rely on advice from their peers in order to make sound decisions. The conclusion is that the herding effect plays a significant role in the investment-related decision-making processes of individual investors in Pakistan.

The data from the study reveal that individual investors apply simple, short methods to investment decisions. Their judgment is often based on illogical sequences of similar events which occurred by chance based on extensive observation, but are considered random; confirming their belief in the repetition of such sequences. Rather than understanding the reason for such similar events, individual investors considered them regular phenomena and develop their belief. Although past experience can be used to make simple and quick decisions, this may result in inaccurate decisions. The findings regarding individual investors are in line with the representativeness heuristic whereby past experience forms the basis for the decision-making process. As a result, past experience guides our judgments even when new circumstances are integrated in our mental representation.

A significant finding deduced from the individual investors' responses is that they respond to new information quickly without waiting for detail; thus basing their subsequent judgment on the initial piece of information. This anchoring then guides their behaviour towards a series of actions, such as estimates, investment positions etc. Excessive belief in one aspect of the event causes prediction errors in relation to future outcomes and

ultimately poor investment decisions. However, avoiding anchoring bias is hard for individual investors due to mood, past experience, personality and human intelligence. This initial estimate provides the basis for incremental adjustments as they receive more information. In comparison, institutional investors stated that they wait for the details, and maintain their investments if they are found satisfactory, or otherwise divest. The response of individual investors is in line with the anchoring bias.

Another important difference reported by the institutional and individual investors is the investment period. Institutional investors mostly invest over longer periods compared to individual investors who trade on a daily basis. Individual investors believe in making quick earnings whereby they rely on rumours and market trends rather than fundamentals. A possible explanation for this is that individual investors do not have the means and skills they require to access and predict advance information (such as analyst forecasts and current company fundamentals), leading them to rely on traditional sources.

Furthermore, it is also evident from the responses that institutional investors are keenly interested in long-term investment with a partial interest in trading. In comparison, individual investors prefer trading to long-term investment because of their interest in making quick earnings. With respect to trading, the majority of respondents agree that stock-related information plays a role, be it rumours or authentic news, in their investment decision-making. However, the trader's ability to gain significant returns depends on the authenticity of news. Thus the study concludes from the responses that individual investors are risk-takers to a greater extent, and trade on the basis of rumours rather than authentic news. This confirms the role of individual psychology in investment-related decisions rather than using traditional investment strategies. The study reported heuristic-driven bias in the investment decision-making process. Investors use a rule of thumb to draw inference from the information at their disposal, which exposes them to certain errors because the heuristic they use is imperfect and leads to errors in certain situations.

Representativeness is the heuristic process whereby investors develop their expectations based on past experience, maintaining the stereotype. In such situations, investors made decisions based on certain past or current assumptions, i.e. if this happened then this will happen scenarios. This heuristic-driven bias makes investors overconfident about their ability to make accurate forecasts and achieve significant returns. The results thus confirmed that Pakistani individual investors ignore traditional finance perspectives in investment decisions and behave in accordance with their personal traits, thus involving them in more aggressive trading and ultimately exposing them more to risk. The use of psychological bias also creates market anomalies as confirmed by respondents, both institutional and individual, that one can beat the market in terms of returns; thus challenging the very notion of the efficient market hypothesis.

VI. CONCLUSION

To conclude, findings from the Pakistani market have reaffirmed the validity of theory. In fact, almost all the factors found in literature have a very strong impact on the decision-making of investors in the Pakistani stock market. Investors make decisions contrary to what traditional finance would suggest as a result of behavioural

factors. Sometimes investors may ignore stocks that are favourable and vice versa. Hence, there are anomalies in the stock markets and other incongruities may occur from time to time in markets. In Pakistan, the external factors that trigger these internal behavioural factors are very strong, and proper mechanisms should thus be in place to gauge and control the impact of these factors.

Thus, the results of the interviews point to a conservative approach among institutional investors who take time to change their beliefs, leading to a slow adjustment of stock prices. It also rejects the existence of herding behaviour among institutional investors who rely more on actual facts and fundamentals rather than market trends. If this is the case then market efficiency does not prevail in PSX, because it states that stock prices reflect all information related to it

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