Ilkogretim Online - Elementary Education Online, 2020; Vol 19 (Issue 3): pp. 5135-5149
http://ilkogretim-online.org
doi: 10.17051/ilkonline.2020.03.735660

Determinants Of Herd Behaviours: Evidence From Pakistani Stock Exchange

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Received: 17-07-2020 **Accepted: 28-08-2020** **Published: 24-09-2020**

Abstract

When it comes to making investing decisions, the herd behaviour of individual investors has piqued the curiosity of market researchers. This study examines the impact of overconfidence, self-attribution, the illusion of control, and information ambiguity on herding behaviour. A multiple regression analysis established the connection between herd mentality and behavioural biases. The correlation between herd behaviour and hubris, self-attribution, the illusion of control, information ambiguity, and age was discovered. In light of these findings, which provide crucial information on the behaviour of individual investors, stakeholders in the stock market, including institutional and foreign investors, market regulators, and firm management, can adjust their actions and regulations.

Key Words: herding, behavioural biases, investors, and stock markets

1. Introduction

Imitation is the fundamental principle of human nature that speeds up the evolutionary process of human beings on daily basis. Through imitation, success and failure actions of the other humans are adopted and ignored respectively. Decisions are based on

individual thinking about different things and are always influenced by the actions of others in the society. The occurrence of imitation not only prevails in social activities but also in economic conditions as well (Salamouris and Muradoglu, 2010). Nofsinger and Sias (1999) defined herding as "a group of investors trading in the same course for a particular period." Graham (1999) added further clarification, stating that "Herding behaviour take place when several people acquire the same accomplishment, possibly because some copy the actions of other people". Herding is defined as "the behavioural patterns that are connected across people," according to Devenow and Welch (1996). It can easily be inferred from the above definitions that similar nature investment decisions by the investors would be referred to as herd behaviour.

The phenomenon of herding emerges due to lack of sufficient information over a certain situation, so the investors are only leftover to the only choice of impersonation of actions of others who use their own judgmental power and available information on certain stocks (Bikhchandani and Sharma, 2001; Gort et al., 2008). Banerjee (1992) debated that in most cases, uncertainty prevails between the investors imitating and those being-imitated regarding holding of accurate information by the latter one. Consequently, this phenomenon leads to quivering aroused of herding that adds to vulnerability of the financial markets (Bikhchandani and Sharma, 2001; Chari and Kehoe, 2004).

In fact, both the institutional and individual investors' trade in stock market, but stock market performance mainly depends on individual investors. The behaviours of investors in stock market of Pakistan are prone to different factors such as individual investors' behaviours, economic situation and political conditions of the country. Generally, the behaviours of individual as well as active traders are both exhibited as stock index actions. The focus of the study is to evaluate/examine the different type of similarities in investors' behaviour affecting investment decisions. Price changes occurs due collective trading- group trading or herd behaviour as in alternate arrangement for getting accurate and sufficient information on the financial performance of stock markets in the country (Kahneman et al., 1991).

Pakistan Stock Exchange rose as the prominent liquid market resulting in an increase of PKR 1,021 billion capital from debt and initial public offerings with index closure on 41,911 points, over the last 12 years such as from 2006 to 2017. Moreover, 558 companies were registered on in June 2018 with market capitalization of PKR 8,655 million equals to 70 billion US Dollars. On observing the bullish trend in 2005, daily yield of Pakistan stock exchange was about 418 million shares circulating in the hands of investors (PSX Annual Report, 2018). It is of immense importance to study which factors motivate the investors to imitate other investors in the market rather than deciding the matters on their own judgments. According to the South Asia Investor Review (2013), the average traded shares were raised by 40 per cent in the Karachi Stock Exchange and was ranked the 2nd best in the world both in terms of macro and micro financing.

It is also evident that no research has ever been carried out to study the behaviour of Pakistani investors. Therefore, the purpose of this research is to study the behaviours of

individual investors in imitation of the actions of other progressive investors. The primary purpose of the study is to examine the existence of herding behaviour in investment decisions and to highlight the association among cognitive profile, information uncertainty, success stories, emotions and herding that investors depict in stock market. The current research investigated investors' behaviour and concluded that an individual investor does not act rationally (Shafi, 2014). Most often, due to non-availability of reliable and accurate information, individual investor imitates the actions of other investors, and this lack of information is called herd behaviour. In the current scenario, herd behaviour gets importance and attention for the researcher because of the decision in stock markets (Shusha & Touny, 2016). However, still little research been conducted and needs further in-depth study of this phenomenon.

2. Review of Literature

Bikhcandani and Sharma (2000) define herding that investors follow other investor actions in the stock market as management. In addition, it is also translucent that invertors mostly follow those investors who are successful, educated, and skilled in their investment. But herding behaviour creates a question that investors like to follow other investors instead of using their skills, efforts, and abilities. Furthermore, Herding refers to the same action in finance amongst very persons and groups, although there might be profit or return. Herd behaviour also occupies different aspects of the investor, such as success tales of other investors, sublime return, media's discussion centre market, and avariciousness of investors, the performance of the stock market based on the internet and convenience of money with investors (Singhvi, 2001). Mostly, investors focus on current economic status and financial information, instead of paying heed to organizational and internal structure (Iqbal and Usmani, 2009). If a manager is skilful and capable, then he does not go for herding behaviour, but if he does not cost herding then that will be an option for it.

2.1. Information Uncertainty

At the outset, buyers choose to acquire goods from the general public rather than the stock market. Unhappy shareholders can be traced back to the broker or agent's provision of inaccurate information (Walia and Kirun, 2009). Investment decisions are influenced by a number of behavioural elements like gambling and fallacy, and these are given greater weight on the Tehran stock exchange. On top of that, the most important aspects of the behavioural side are security and information (Masomi and Gayckhloo, 2011). To further categorise investors, one might look at their underlying psychological aptitude when making financial judgements. There are four types of investors, as classified by Wood and Zaichkowsky (2005): risk takers, loss averse investors, overconfident investors, and long-term traditional traders.

When comparing individual traders to institutional traders, key distinctions must be made. Retail investors, while having fewer resources at their disposal, make up the vast majority of the stock market's active participant base. The effects of individual investors on the stock market are also noted to be minimal (Das, 2012). If there were a regular flow

of information coupled with stock prices, herding would be less of a concern. Not only would there be no room for confusion or uncertainty, but the phenomenon is a direct result of herd mentality. Investors in Australia benefit from a steady stream of data about market conditions and may make informed decisions about whether or not to participate in the market.

H1: Information uncertainty is influencing herding behaviour.

2.2. Illusion of Control

Balta et al. (2013) demonstrated or recognized two factors that affect herd behaviour. The first one is that the investors take credit, confidence, the fantasy of perception related to gambol. The second one is the uncertainty of information. He also founds that dream about organizing and self-confidence has a positive role in herding behavior. Consequently, said that herd hurts self-attribution. Whenever high-level of ambiguity is predicted that leads investors to herd behaviour because most of the time, they copy the choices and activities of others. There are two types of investors that are divided according to their trading activity. The first one is active traders, who apprehended themselves from the daily business-like transaction and investment they did. The second type is passive traders, who look for a comfort zone after investment and wait for the result in the upcoming time. Warren et al. (1990) also divided investors into four categories that are active and passive and heavy and light. Human being is capable to take decision lucidly or having control of illusion, which affect the action of others that the information might be right (Qianzade & Hullier, 2009). Therefore, the illusion of control boosts investors to copy the verdict or result of others.

H2: Illusion of control bias of investment is positively influencing herding behaviour

2.3. Self- Attribution

Self-attribution is when an investor connects prosperous of life with his experience and efforts while considering failure or loss with the factors of the environment. These people who are self-attributed will never follow other investments. Most of the time investors pay less heed to past performances of security, therefore they follow those, who are successful and neglect those, who failed (Barber and Odean, 2013). The risky selection in finance is to decide rationally that are based on biased behaviour, new concepts, framework, or critical examination (De Bond et al., 2008). Interest and fervour, extra saving, and decision-making style are the two main factors that can affect the behaviour of finance (Fungfeld and Wang, 2009).

H3: Self-attribution of investors is negatively influencing herding's behaviour.

2.4. Overconfidence

Shusha and Touny (2016) explored that overconfident investors are far from herding behaviour, due to varying levels of experience of investors. Grinblatt and Keloharju (2001) examine that overconfident investors trade aggressively that sometimes they follow wrong information blindly which increased overall trading volume. During

decision making, psychological factors play a vital role. Those investors who are nervous and overconfident trade regularly with other investors (Grinball and Keloherju, 2001). Investors always expect more profit and less loss, despite that they motsly struggle to get extra benefits from the investment they made. Wood and Zaichowsky (2004) identified customization of losses, management of assets, and limited time frame as factors responsible for changing the decisions and attribute of investors. Other studies identify the factors responsible for triggering trading by investors such as Grinbalt and Kelohreju (2009) reported past performances, price orientation effects, and life cycle investment as these triggering factors.

Overconfident traders are more confident from their abilities to assess their investment that is the reason that they are following others blindly, and herd as well. They are that much confidence that they think that they have some special knowledge or information about the stock market. Therefore, they neglect the dark or risky side, which they cannot normally afford. Furthermore, they are unable to properly judge the information also, expect some outcome or result of investment they did. Although, they are quite aware of the investment that the investment they did, its outcome will be in loss (Barber and Odean, 2013). Most of the time overconfident investors not properly examine the performance of a company and recklessly follow it, which causes a great loss (Pompain, 2006).

H4: Overconfidence bias of investors is positively influencing herding behaviour.

2.5. Demographic Variable

According to Khoshsirat, and Salari (2011), the herding behaviour also reported its presence in communist culture. In Iran, the economic system herding is the most important matter. There are only two industries such as automobiles and minerals which can hold herding behaviour. Various research has explored in the format of gender-based investment. According to Feng and Seasholes (2008) each gender has similar characteristics and portfolio, whenever they are going for investment. Both gender and age have a resemblance connection with risk (Dash, 2010). Furthermore, the female is those who like to take the risk during investment, but the male is sharp, they keep a close eye and avoid taking the risk (Embrey and Fox, 1997).

In this modern world, there are only dynamic markets, which provide an abundance of opportunities to an individual investor for investment. Whenever a person wants to invest, his personal preference and desire are required. Demography and paucity of information are the two factors that influence an investment decision. Risk-taking and individual behaviour are the two factors about which the researcher should know and know how to deal with the changing mood of the investors. These two factors affect investor behaviours. Subash (2012) also explores a good link between demographic characteristics and herding behaviour.

According to Business insider (2013), National association for security investor education foundation arranged research in U.S.A for investigating the elements and

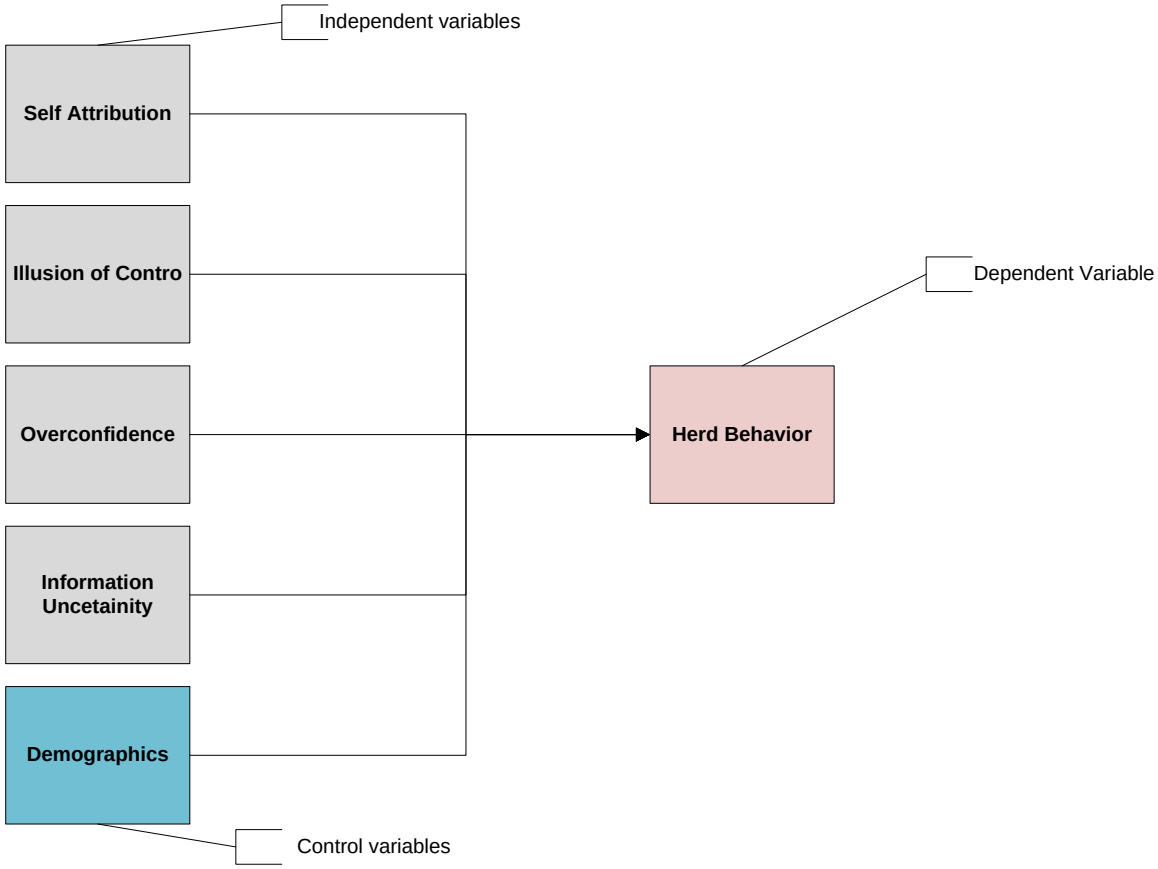
factors that influence the individual investor behaviour. They also realized that socialization, inheritance, information about investment, demographic characteristics, proper arrangement of money, economic situation affect investors' behaviour largely. Fünfgeld and Wang (2009) in research categorized investors based on the socio-demographic and financial situation. Two things that can affect the choices and decision of investment is personality and age. According to Bashir et al. (2013) that age is closely conjugated with herding behaviour and risk-taking approach.

H5: Herding behaviour and age has a positive relationship.

3. Methodology

The data was taken through a questionnaire, to fulfil the objective of the study. The questionnaire was consisting of 31 questions. For analysing the data, a different method was used, besides the Durbin Watson statistic method was also used to check the autocorrelation in the data. Individual investors trading at Pakistan stock exchange are selected as study population. However due to investors busy routine and their unavailability the author distributed the questionnaire among selected sample of 450 investors of which only 200 was taken for the population of the study and is considered as a reasonable sample. Furthermore, the technique that is used in the study is convenient to get the answer to the whole population easily. However, to get an accuracy rate and precision in the answer of the questionnaire, the scholar converts the questionnaire to Urdu language while keeping the educational background of the investors. The questionnaire was scattered in Karachi, Islamabad, and Lahore, in which 53 was distributed in Karachi, 97 & 50 in Islamabad. The data was taken from 150 investors, in which 19 investors age was between 26-30, besides 51 investors age was between 31-15, 43 investor age was between 36-40, and 37 investors age was above 40. Furthermore, keeping educational background, so five investors have related education to finance, 44 was just graduated, while 72 were uneducated and 29 are master's degree holders. Mix sample is used in the study which is good for this sort of study. The survey method is used in the study to cover all the topics in which 10 questions were directly or indirectly conjugated with herd behaviour. The study has adopted the questionnaires (see Appendix 1) from the past study of Pompian (2006), Hon-Snir et al. (2012) and Peterson et al. (2013). To observe which behavioral biasness of investor causes herd behaviour, the study has categorised the individual investor behaviour into overconfidence, self-attribution, illusion of control, and information uncertainty. A questionnaire is distributed in the city of Karachi, Lahore, Islamabad, and Peshawar to extract the generalised data of individual investor behaviour.

4. Theoretical Model



5. Results and Discussion

The whole data was passed through SPSS software or application to make the data understandable for the reader. SPSS software makes different graphs and tables from the numerical data. Furthermore, behavioural bias and herding behaviour are the two main factor of trade, which is interrogated in the study and its relationship. Actually, investors trade too much, but unfortunately, they follow slander information without any kind of investigation. Does the study also claim that whether herding has existed in Pakistan or not? And what are the different factors of herding that stimulate Pakistan investors?

5.1. Reliability Analysis

Cronbach's alpha is the most reliable and useful measure. According to Kline (1999), 0.80 is acceptable for Conbanch alpha in general cases. The further said that 0.70 below would be constructed for psychological value. This is due to the diversity construct. There is a scale that is comprised of seven items that are used for the measurement of information uncertainty. It is also claimed that 0.61 is output for Cronbach alpha. Kline (1999) said that although the amount of value is low, but some will be increased if the response rate is increased. So, it is concluded that the alpha reliability value is within the prescribed range and remains is greater than 70 which is demonstrated that there is no defect in the reliability of the instrument.

Table: 5.1	
Variable Alpha Reliability	
Herding Behaviour	0.92
Over Confidence	0.72
Self-Attribution	0.71
Illusion of Control	0.74
Information Uncertainty	0.61

5.2. One Way Annova

This statistical method is applied in case when mean of various group using one independent variable need to be estimated. The results of a one-way Annova study of the relationships between different age groups and herding behaviour are shown in below table 5.2.

Table: 5.2

Age Group	N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
26-30	19	29.21	10.2	2.34	26.29	30.12	26	53
31-35	51	33.74	13.6	1.90	32.92	35.57	39	65
36-40	44	37.10	12.34	1.88	36.30	40.90	43	77
40 and above	36	66.20	12.38	2.04	43.89	70.20	42	92

Note: Herding Behaviour is dependent variable

The age of investors served as the dependent variable. The ages of investors fell into four distinct categories: 26–30, 31–35, 36–40, and 40+. It was hypothesised that ageing and herding go hand in hand. Those between the ages of 26 and 30 have a mean of 29.21, those between the ages of 31 and 35 have a mean of 33.74, and those between the ages of 36 and 40 have a mean of 37.10. Those aged 40 and older have the highest mean score, 66.20. Given that the findings tend to support the notion that herding behaviour typically reaches its peak during middle age, it seems plausible to accept the original premise.

5.3. Regression Analysis

We examined the relationship between the dependent and independent variables using a multivariate linear regression model. R2 of 0.87 is acceptable because it is close enough to 1 to be considered excellent. According to Table 5.3, the model's fitness is excellent with an overall F value of 79.01. The outcomes of each variable's regression analysis are shown in Table 5.3.

Table: 5.3					
Model	**Sum of Squares**	**Df**	**Mean Square**	**F**	**Sig.**
Regression	16030.6	4	4006.4	79.01	0.00[a]
Residual	7345.5	145	50.7		
Total	23376.1	150			
Note: Information Uncertainty, Self-Attribution, Over Confidence and Illusion of Control are predictors. While Herding behaviour is dependent variable.					

Table 5.4 presents the findings of the regression analysis, which demonstrate, consistent with the literature, that a one-unit increase in overconfidence bias correlates with a 0.38-unit increase in herding behaviour. Self-attribution biases had a coefficient of 1.24 at a significance level of 0.00. This evidence refutes the main premise that there is no association between herding and self-attribution bias. The regression study revealed a positive link between herd behaviour and investor illusion of control bias, with a coefficient of 0.94 and a p value of 0.01. This finding provides support for the basic hypothesis. Similar to the substantial positive correlation between herding behaviour and information uncertainty, the regression coefficient between herding behaviour and investor information uncertainty bias is 0.26 with a significance level of 0.00.

Table No: 5.3					
	Un-Standardized Coefficients		**Standardized Coefficients**		
Variables	Beta	Std. Error	Beta	T	Sig.
C	4.6	3.61		1.26	0.21
OC	1.5	0.58	0.38	2.62	0.01
SA	7.2	2.0	1.24	3.52	0.00
IC	5.7	2.5	0.94	2.13	0.03
IU	0.8	0.20	0.26	4.28	0.00
Note: C, OC, SA, IC, and IU stand for constant, overconfidence, self-attribution, illusion of control, information uncertainty and are independent variables.					

6. Conclusion

When there is widespread uncertainty because of the partial nature of accessible data, investors tend to assume that other market participants have more information than they do. There is an exact correlation between degrees of uncertainty and data dependability. Standard market practise at that moment is to follow the broad direction of events. As a result of having so little information to work with, individuals tend to behave in groups.

The absence of analytical abilities and information available to investors both contribute to herd mentality. Age, information ambiguity, overconfidence, self-attribution, illusion of control, and social age are all positively correlated. A cross-section of participants from Pakistan's three stock exchanges provided information on the aforementioned variable. The findings indicate that stock market traders have less financial knowledge than the general population. Taking into account the concerns raised by the study, it is possible to conclude that herding occurs on the Pakistani stock market. When investors succumb mindlessly to the market's herd mentality, they forfeit all control over their investments.

According to research that build upon one another, overconfidence, self-attribution, the illusion of control, and information uncertainty all contribute to herding behaviour in the financial market. The herding behaviour can also be positively affected by demographic variables like as age. Illusion of control bias is exemplified by investors' herd behaviour resulting from their mistaken sense of control over their decisions. Consequently, individuals who succumb to this prejudice are more inclined to invest in line with the herd. A further contributor to this herd mentality is the self-attribution bias, which happens when an individual takes credit for the positive outcomes of his or her finance decisions but allocates blame to other variables when the decision results in an unfavourable consequence. The overconfidence of investors can lead to illogical decision-making and contribute to the herd mentality that characterises the financial markets. The herding and overconfidence biases that might derail investment decisions can be reduced by consulting agents and seasoned investors and by completing a comprehensive review of all available facts.

Participation by a small number of Pakistani investors in the study is a limitation. Due to the fact that investor behaviour and attitude change in reaction to market situations, a bigger sample size will produce more reliable results. The respondent of the three stock exchanges did not receive an independent analysis apart from this. This study investigates whether or not there is a relationship between prejudice and herding behaviour. Future studies should investigate how cognitive and behavioural biases affect herd behaviour. To gain a more complete understanding of the problem, the research might be expanded to examine how factors such as upbringing and degree of education affect herding behaviour.

References:

Bashir, T., Azam, N., Butt, A. A., Javed, A., & Tanvir, A. (2013). Are behavioral biases influenced by demographic characteristics & personality traits? Evidence from Pakistan. European Scientific Journal, 9(29).

Balta, N., Fernandez, I. V., & Ruscher, E. (2013). Assessing the impact of uncertainty on consumption and investment. Quarterly Report on the Euro Area (QREA), 12(2), 7-16.

Barber, B. M., & Odean, T. (2013). The behavior of individual investors. In Handbook of the Economics of Finance (Vol. 2, pp. 1533-1570). Elsevier.

Banerjee, A. V. (1992). A simple model of herd behavior. The quarterly journal of economics, 107(3), 797-817.

Bikhchandani, S., & Sharma, S. (2001). Herd behavior in financial markets. IMF Staff Papers, 2001(002).

Brenkert G. (2009) Marketing Ethics, Blackwell Publishing, Oxford

Bryman, A. (2016). Social research methods. Oxford university press.

Business Recorder (2013). http://www.brecorder.com

Chari, V. V., & Kehoe, P. J. (2004). Financial crises as herds: overturning the critiques. Journal of Economic Theory, 119(1), 128-150

Daniel, K., Hirshleifer, D., & Subrahmanyam, A. (1998). Investor psychology and security market under-and overreactions. The Journal of Finance, 53(6), 1839-1885.

Das, S. K. (2012). Small investor's behaviour on stock selection decision: A case of Guwahati stock exchange. International Journal of Advanced Research in Management and Social Sciences, 1(2), 59-78.

Dash, M. K. (2010). Factors influencing investment decision of generations in India: An econometric study. Int. J. Buss. Mgt. Eco. Res, 1(1), 15-26.

De Bondt, W. F., Muradoglu, Y. G., Shefrin, H., & Staikouras, S. K. (2008). Behavioral finance: Quo vadis?. Journal of Applied Finance (Formerly Financial Practice and Education), 18(2).

Devenow, A., & Welch, I. (1996). Rational herding in financial economics. European economic review, 40(3-5), 603-615.

Embrey, L. L., & Fox, J. J. (1997). Gender differences in the investment decision-making process. Financial Counselling and Planning, 8(2), 33-40.

Feng, L., & Seasholes, M. S. (2008). Individual investors and gender similarities in an emerging stock market. Pacific-Basin Finance Journal, 16(1-2), 44-60.

Fellner, G. (2009). Illusion of control as a source of poor diversification: Experimental evidence. The Journal of Behavioral Finance, 10(1), 55-67.

Fünfgeld, B., & Wang, M. (2009). Attitudes and behaviour in everyday finance: evidence from Switzerland. International Journal of Bank Marketing, 27(2), 108-128.

Graham, J. R. (1999). Herding among investment newsletters: Theory and evidence. The Journal of Finance, 54(1), 237–268.

Grinblatt, M., & Keloharju, M. (2001). What makes investors trade?. The Journal of Finance, 56(2), 589-616.

Grinblatt, M., & Keloharju, M. (2009). Sensation seeking, overconfidence, and trading activity. The Journal of Finance, 64(2), 549-578.

Gort, C., Wang, M., & Siegrist, M. (2008). Are pension fund managers overconfident?. The Journal of Behavioral Finance, 9(3), 163-170.

Hon-Snir, S., Kudryavtsev, A., & Cohen, G. (2012). Stock market investors: Who is more rational, and who relies on intuition. International Journal of Economics and Finance, 4(5), 56-72.

Iqbal, A., & Usmani, S. (2009). Factors influencing individual investor behavior (The Case of the Karachi Stock Exchange). South Asian Journal of Management Sciences, 3(1), 15-26.

Karachi Stock Exchange (2014). Retrieved from http://kse.com.pk.

Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1991). Anomalies: The endowment effect, loss aversion, and status quo bias. Journal of Economic perspectives, 5(1), 193-206

Khoshsirat, M., & Salari, M. (2011). a study on behavioral finance in Tehran stock exchange: examination of herd formation. European Journal of Economics, Finance and Administrative Sciences, 32(1), 168-183.

Kline, P. (1999). The Handbook of psychological testing (2nd ed.). London: Rout ledge.

Lahore Stock Exchange (2014). Retrieved from http://lse.com.pk.

Markowitz, H. (1952). Portfolio Selection. The Journal of Finance, XXI, 77-91.

Masomi, S. R., & Ghayekhloo, S. (2011). Consequences of human behaviors' in Economic: the Effects of Behavioral Factors in Investment decision making at Tehran Stock Exchange. In International Conference on Business and Economics Research (Vol. 1, No. 2, pp. 234-237).

Nofsinger, J. R., & Sias, R. W. (1999). Herding and feedback trading by institutional and individual investors. The Journal of Finance, 54(6), 2263-2295.

Peterson, D., Carlander, A., Gamble, A., Gärling, T., & Holmen, M. (2015). Lay people beliefs in professional and naïve stock investors' proneness to judgmental biases. Journal of Behavioral and Experimental Finance, 5, 27-34.

Pompian, M. M. (2006). Behavioral Finance and Wealth Management: How to Build Optimal Portfolios That Account for Investor Biases ([Wiley Finance]. Wiley.

Quiamzade, A., & L'Huillier, J. P. (2009). Herding by attribution of privileged information. Journal of Behavioral Decision Making, 22(1), 1-19.

Salamouris, I. S., & Muradoglu, Y. G. (2010). Estimating analyst's forecast accuracy using behavioural measures (Herding) in the United Kingdom. Managerial Finance.

Shafi, M. (2014). Determinants influencing individual investor behavior in stock market: a cross country research survey. Nigerian Chapter of Arabian Journal of Business and Management Review, 62(1100), 1-12.

Shusha, A. A., & Touny, M. A. (2016). The attitudinal determinants of adopting the herd behavior: an applied study on the Egyptian exchange. Journal of Finance and Investment Analysis, 5(1), 55-69.

Singhvi, V. (2001). Investor sentiment: Its measurement and dimensions. New York University, Graduate School of Business Administration.

Subash, R. (2012). Role of behavioral finance in portfolio investment decisions: Evidence from India.

South Asia Inventors Review (2013). http://www.southasiainvestor.blogpost.com

Vieira, E. F. S., & Pereira, M. S. V. (2015). Herding behaviour and sentiment: Evidence in a small European market. Revista de Contabilidad, 18(1), 78-86.

Walia, N., & Kiran, R. (2009). An analysis of investor's risk perception towards mutual funds services. International Journal of Business and Management, 4(5), 106-120.

Warren, W. E., Stevens, R. E., & McConkey, C. W. (1990). Using demographic and lifestyle analysis to segment individual investors. Financial Analysts Journal, 46(2), 74-77.

Wood, R., & Zaichkowsky, J. L. (2005). Attitudes and Trading Behavior of Stock Market Investors: A Segmentation Approach. Advances in Consumer Research, 32(1).

Appendix: 1

a. Questions Related to Herd Behaviours:

1. If there were several "buy" orders placed on equities at the start of the trading session, I would like to purchase such stocks.
2. I would raise the total of my stock market holdings if the overall trading activity in the stock market during the last month was greater than normal.
3. I do not want to differ from other investors.
4. I only purchase popular shares.
5. I always purchase and sell the same shares, as I believe the majority is doing.
6. I disregard my own information and follow the majority.
7. I often blindly imitate decisions of others when making investment decisions.
8. I frequently consider the data that the bulk of investors use as the foundation for stock market trading.
9. When you need to reach an investment decision, how important to you are the following information gathering processes.

- Social network
- Analyst recommendation
- Follow other investors
- Follow market leader
- Media Information

10. Rate the following factors, you think, is most important for the market trend.
    - The news stories in media.
    - The forecasts of analysts.
    - Over confidence among investors in the stock market.
    - Earning & Profitability of the listed companies.
    - Individual investors following the majority.
    - Economic condition of the country.
    - Political scenario of the country.
    - Interest rates.

b. Questions Related to Overconfidence:

1. I believe that I can predict the development in the stock market better than what is actually possible.
2. I regard my own competence to be superior to what it actually is.
3. I consider my own decision base to be better than it actually is.
4. Most of the time I overestimate my ability to make good investments
5. I always confused about true competence and the influence of chance.

c. Questions Related to Self-Attribution:

1. After making an investment, assume that you overhear a news report that has negative implications regarding the potential outcome of the investment you've just executed. How likely are you to then seek information that could confirm that you've made a bad decision?
2. When returns to your portfolio increase, to what do you believe the change in performance is mainly due?
3. After you make a successful trade, how likely are you to put your profits to work in a quick, subsequent trade, rather than letting the money idle until you're sure you've located another good investment?
4. Relative to other investors, how good investor is you?

d. Questions Related to Illusion of Control:

1. When you participate in games of chance that involve dice—such as Backgammon, Monopoly, or Craps—do you feel most in control when you roll the dice yourself?
2. : When returns to your portfolio increase, to what do you mainly attribute this turn of events?
3. When you are playing cards, are you usually most optimistic with respect to the outcome of a hand that you've dealt yourself?
4. When and if you purchase a lottery ticket, do you feel more encouraged, regarding your odds of winning, if you choose the number yourself rather than using a computer-generated number?

e. Questions Related to Information Uncertainty:

1. . How do you expect your investment to develop over the next 3 months?
2. How do you expect the financial position of your company to change over the next 12 months?
3. How do you expect the general economic situation in this country to develop over the next 12 months?
4. General Business Conditions: What is your evaluation of the level of general business activity (last Six Months?)
5. Expectations for the next three months: Our domestic Investment activities with respect to other countries will (without considering differences in the length of months or seasonal fluctuations):
6. You have poor knowledge about Company X's stock and is therefore uncertain about investing in it. Suddenly many of your co-workers and competitors start buying it. How would this affect your attitude towards 'X'?
7. Have you put off an investment decision expecting new and favourable (positive) information release regarding the stock?

Source: Pompian (2006), Andrey, Cohen and Hon-Snir (2012) and Peterson et al. (2013).