Journal of Finance and Accounting Research
Vol. 1, No. 1, February 2019, 52–69
doi: 10.32350/JFAR.0101.04

Investment Behaviour of Analysts: A Case Study of Pakistan Stock Exchange

Salman Ahmed Shaikh[1]

Abstract

Security prices in efficient markets reflect all relevant information. Past price formations and even fundamental analysis cannot guarantee abnormal returns consistently to any pre-identified strategy or market participant, be they novice or expert traders. There have been various studies conducted with the aim to test market efficiency in emerging markets. However, in this study, we have surveyed the professional investment community and have studied their stated actions in making investments. Our results indicate the prevalence of herding and overconfidence in professional analysts. We also found that analysts extrapolate the past into future forecasts. We also discovered an association between demographic characteristics and the choice of security valuation methods that the analysts use. In line with Chevalier and Ellison (1998), we found that younger analysts herd less than the older ones.

***Keywords*:** Investment behaviour, behavioural finance, herding, mutual funds, security analysis, CAPM, technical analysis**.**

JEL Classification: G02, G11, G12, G14

Introduction

Behavioral finance tries to explain the anomalous behaviour of security prices on the basis of psychological biases in human cognition and irregularities in human behavior. In behavioural investment, it is quite common that investors make mental accounts of the different motives for holding and using their money. This explains the paradoxical behavior of an investor who might be buying lottery with a specific amount and at the same time may put money in the forced savings plans with banks and peers without

[1] Assistant Professor, Department of Management Sciences, Shaheed Zulfikar Ali Bhutto Institute of Science and Technology, Karachi, Pakistan.
Email: salman@siswa.ukm.edu.my

earning any profit. Thus, investors might be risk-averse for a particular portion of their investible endowments and risk-neutral for another portion. This contrasts with the singular utility preferences in the mainstream portfolio theory.

Furthermore, financial investments should be evaluated purely on the grounds of risk-return metrics, however, emotions like regret and loss aversion as well as cognitive shortcuts like framing and anchoring might influence investment decisions. There is also a tendency to hold losers too long and sell winners too soon among investors (Shefrin & Statman, 1985).

On the other hand, if gender differences exist in investment behaviour, then the gender with high risk aversion would be offered safer investments as compared to the gender with less risk aversion (Schubert, Brown, Gysler & Brachinger, 1999). The behavioural finance literature provides some evidence that women are more risk averse and less overconfident than men (Bliss & Potter, 2002). Such gender differences may affect investment performance. Additionally, investors may process information differently based on their cognitive capacities and investment skills. Thus, rumours can make novice investors herd while seasoned analysts benefit from noise trading by avoiding mistimed investments. The investment horizon of institutional fund managers and individual investors may also be different and both of them may not act as ordinary shareholders (Suto & Toshino, 2005). This behavioural complexity shows that a uniform asset pricing model may not be suitable for all the different types of investors with different objectives, motives and characteritics. Finally, agency problems also have an influence on the investment behaviour of equity fund managers (Arnswald, 2001).

Following is a brief list of various biases and behavioral irregularities established in empirical studies and experimental researches.

1.1. Representativeness Heuristic

In this phenomenon, people expect that recent information represents the key population parameters well enough. Therefore, people tend to give more weight to recent evidence over prior beliefs

and/or past data. The fallacy here is that representative data or observation may not necessarily be repeated in future.

1.2. Herd Behaviour

Herding refers to following the market consensus. It is not necessary that herding should be considered irrational. It is a rational response in the face of uncertainty and lopsided payoffs when deviation from the consensus is penalized more when it does not work than rewarded when it does. In the next section, we will report evidence from past studies that some fund managers, analysts and even CEO's mimic each other.

1.3. Disposition Effect

As explained later in the prospect theory as well, investors tend to avoid the situation of having to bear actual irreversible losses. People tend to hold losing stocks too long and sell gaining stocks too early. People believe that until they sell the stock at a price less than the purchasing price, loss has not occurred. Hence, they wait for the price reversal on stocks that have gone down in value. But, investors tend to sell gaining stocks too early so as to book gains immediately.

1.4. Anchoring

Investors often put more emphasis and credence on recent market information including prices. People tend to extrapolate from recent trends without confirming that they may differ from historical, long-term averages and probabilities. One form in which it is clearly visible in investors' behaviour is that often people are willing to take more risk after they have made good earnings in the recent past. Contrarily, they take less risk after incurring losses in the recent past. In both cases, risk taking may vary even if the fundamentals and other information remain the same.

1.5. Regret Theory

Human beings cannot always detach their emotions from investment decision making. This theory explains the emotional reaction people experience after realizing their errors in decision making. People are sometimes emotionally attached to the price at which they have purchased the stock. Current market price and other information

may suggest that the past price is not a relevant basis for value securities. However, emotional attachment leads people to use it as an anchor. This results in behaviours like delay in selling at prices lesser than the purchase price so as to avoid the feeling of regret.

1.6. Loss Aversion: Prospect Theory

In loss aversion, the utility function is steeper for losses than for gains. This means that people experience more disutility from a loss than the positive utility experienced from an equal gain. According to Kahneman and Tversky (2013), this phenomenon is referred to as loss aversion. Kahneman and Tversky (2013) empirically estimated the difference between the utility and disutility of equal amounts of gain and loss and their estimates suggest that disutility from loss is a multiple of two and half times the sense of utility from an equal amount of gain.

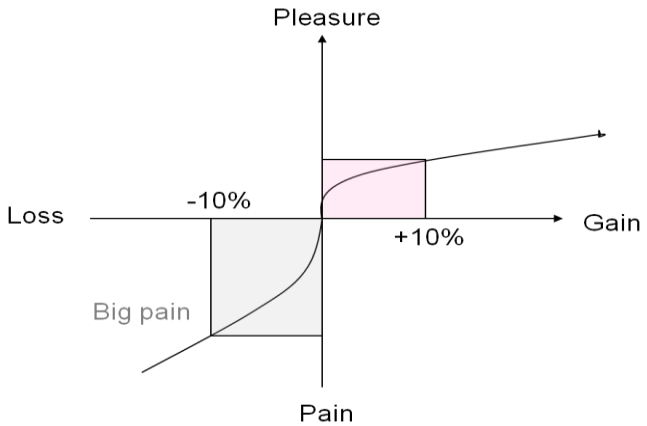

Figure 1. Utility of gain and loss

It also leads to another exposition of this anomaly. The framing of choice by emphasizing gains more than losses or vice versa also tends to influence investment choices. Even though the information content in both cases could be exactly the same.

2. Rationale for the Study

If markets are efficient then current prices will reflect all the relevant information, either public or private. It implies that in an efficient market, it will be extremely difficult for any investor or any strategy

to consistently beat the market and gain excess returns over the market return.

However, in the real world, mutual funds and investment advisors do exist and earn a handsome remuneration for their services. It is also observed that the average size of a mutual fund's portfolio has increased in developed as well as developing countries. In Pakistan, for instance, despite there being almost no IPOs in the last couple of years, the size of the mutual funds industry has still grown.

As far as the investment decision making in funds or by individuals is concerned, there have been many attempts made in the past studies to analyze the investor behaviour. Jensen (1968) analyzed 115 mutual funds for the years 1955-64 and concluded that fees and expenses take away any advantage that the portfolio managers might have.

Even if investment management fees and loads are added back to performance measures and returns are measured at gross of management expenses, Jensen (1968) concluded that on average the funds apparently are not quite successful enough in their trading activities to cover even their brokerage expenses.

It is also pertinent to study how soon the information is incorporated into price and whether that is balanced on average or result in over or under reaction. For instance, in 1987 stock market crashed in USA and 22.6% value of shares declined without any apparent news. Moreover, over the years, 50 largest one-day stock price movements occurred on days of no major announcements. It has been established empirically that the inclusion of stock in the S&P 500 index results in significant share price reactions.

Overreaction causes past losers to become underpriced and past winners to become overpriced. Werner, De Bondt and Thaler (1985) studied two portfolios of 35 stocks. One portfolio comprised extreme winners over the past three years and the other portfolio comprised extreme losers over the past three years. It was found that the losers outperformed winners over the next four years. The losers were up 19.6% relative to the market, whereas the winners were

down 5% relative to the market. Hence, there was a difference of 24.6% between the two portfolio returns.

Odean's (1999) study of overconfidence in the marketplace listed several important findings given below.

- Frequent traders earn lesser returns as compared to less frequent traders.
- Overconfident traders hold under-diversified riskier portfolios.
- Overconfident insiders improve price quality. Hence, they exploit the information.
- Overconfident noise traders worsen price quality. Hence, speculation leads to price irregularity.

In some studies, it has also been discovered that age plays a role in risk taking. Younger and older fund managers behave differently because of career concerns. Younger fund managers do not tend to take on much risk and hence avoid being in an odd position. Hence, herd behaviour is not so uncommon among even the specialist investors (Chevalier & Ellison, 1999).

In literature, three motives for herding have been prominently noted and observed, that is, information-based herding, reputation-based herding and compensation-based herding. Information-based herding occurs in situations when the analysts lack confidence in their private information. Reputation-based herding is explained by the career concerns of the analysts and it is more common among less experienced and younger analysts. Compensation-based herding is also influenced by career concerns. Since deviation from the market consensus is rewarded less when the analysts are right and penalized more when they are wrong, the younger and inexperienced analysts tend to herd more often.

Cheng, Liu and Qian,(2006) studied weights assignment by money market fund managers on the forecast recommendation of Buy-Side-Analysts (BSAs) and Sell-Side-Analysts (SSA). They concluded that the optimal weight put on BSA's research by fund management increases with the quality of their signals. According to them, the weight put on BSA's research also increases when the quality of the SSA's signal decreases. They also found that weight depended on the degree of bias. When the degree of bias increases

in SSA's forecast, it also leads to an increase in optimal weight put on BSA's forecasts.

Brown, Wei and Wermers (2013) investigated the inclination of fund managers to herd, that is, to follow analysts' recommendations. They also tried to explore whether the herding behaviour by fund managers had an impact on stock prices in turn.

Discussing their findings, Brown et al. (2013) noted that mutual fund herding does have an influence on stock prices. In their study, it was found that mutual funds overreact when they engage in herding behaviour. Positive consensus recommendation revisions result in a herd of funds buying a stock, while negative revisions result in a herd of funds selling a stock. They also concluded that herding on recommendation changes is driven partly by career incentives.

Elliot, Hodge and Jackson (2010) investigated the relationship between non-professional investors' information choices and their portfolio returns. They found that less experienced non-professional investors earn lower returns as their use of unfiltered information increases relative to their use of filtered information.

Contrarily, more experienced investors earn higher returns as their relative use of unfiltered information increases. Elliot et al (2008) interpreted the findings to suggest that the observed phenomenon is explained by investors' ability to make effective use of unfiltered information. They concluded that the relative use of information (unfiltered or filtered) does not determine the returns for investors.

Noting the effect of investing experience, the noted scholars suggested that less experienced investors are likely to remain unable to use unfiltered information. This is not the case with more experienced investors. Hence, investing experience affects the ability to make better use of unfiltered information which determines the return. Relative availability of information content is not a principal determinant of returns.

Other than herding, some studies have explained other psychological factors that affect different analysts' behaviour. For

instance, Chen and Jiang (2005) reasoned that overconfidence, which is boosted by the holding of private information, may result in deviation from consensus.

In the current study conducted for Pakistan's premier equity market, we try to analyze the investment decisions by professional investors. We attempt to analyze various links between demographic variables and the choice of security valuation methods. We also try to find the evidence for various behavioural finance concepts and hypotheses like herd behaviour and overconfidence. A similar study had been done for Pakistan by Qureshi, Rehman and Hunjra (2012) based on the responses collected from equity fund managers of insurance companies, commercial banks, and equity investment companies by applying stratified random sampling technique. The results of their study demonstrate that a positive and significant relationship exists among heuristics, use of financial tools, risk aversion, firm-level corporate governance, and investment decision making.

3. Research Methodology

Primary data is collected from 47 people who are professional analysts working in mutual funds, brokerage houses and investment companies. Data is collected through a structured questionnaire. Sample unit comprises individuals who are professionally working as financial analysts, fund managers, broker analysts, and research analysts in senior and junior positions. For sampling, a mix of convenience and snowball sampling method is used. For analysis of data, descriptive tools are used. Contingency tables used in the study also enable us to highlight possible relationships between different factors in the study.

4. Data Analysis

4.1. Profile of Respondents

The mean age of the respondents is 29 years. The median age of respondents is 27 years. It shows that mostly young people are hired for the task of financial analysis who are usually better trained and equipped with numerical computations and use of modern day software to carry out financial numerical analysis.

We collected data about 'marital status' so that we can relate marital status with security valuation methods used and identify whether people with more family expenditure requirements tend to be radical or conservative in their forecasts. If they herd more, then, they are conservative forecasters. Table 1 gives the frequency distribution of this variable.

Table 1
Marital Status Profile of Respondents

Marital Status	Number of Respondents
Married With Kids	15
Married With No Kids	6
Single	26

Table 2 shows the profile of respondents by designation. It can be seen that the analysts chosen for the study in this sample are working in both senior/supervisory and junior positions. Table 2 gives the frequency distribution of this variable.

Table 2
Designation Profile of Respondents

Designation	Number of Respondents
Fund Manager	8
Head of Research	4
Stock Broker	4
Senior Analyst	17
Junior Analyst	14

4.2. Analysis from Behavioural Finance Perspective

To analyze the investment behaviour of analysts, we asked the analysts to forecast the market movement in the third quarter of 2013, that is, July 2013 to September 2013. Table 3 reports the results.

Table 3
Forecast for KSE for 3QCY13

Forecast (% Change)	Frequency	Percent	Cumulative Percent
-10	3	6.52	6.52
-5	3	6.52	13.04
0	7	15.22	28.26
5	19	41.20	69.57
10	14	30.43	100.00
Total	46	100.00	

The average result of their forecasts is 4.13% computed as group mean. Hence, on average, professional analysts think that market will rise by 4.13% during Jul-Sep, 2013. It can be seen from Table 4 that the bullish past influences the future expectations. Market return in excess of 10% in 1QCY2013 and 2QCY2013 influence the investors to carry the bullish sentiments forward in 3QCY13.

Table 4
Past Returns in KSE for CY 2013

Date	Close Value	Return
2-Jan-13	17,242.74	
1-Feb-13	18,173.67	5.40%
1-Mar-13	18,043.31	-0.72%
1-Apr-13	18,982.42	5.20%
2-May-13	21,823.05	14.96%
3-Jun-13	21,005.69	-3.75%
1-Jul-13	21,363.16	1.70%
Average Monthly Return		3.80%
Average Overall Return		23.90%
1QCY2013 Return		10.09%
2QCY2013 Return		12.54%

About marital status and herding, it can be seen from Table 5 that 80% of unmarried analysts do not follow market consensus as compared to 40% of married analysts with no kids and 60% of

married analysts with kids. This shows that possibly single people are less conservative and more ambitious in their financial valuation.

Table 5
Marital Status and Herding

Market Consensus	Marital Status			Total
	Married with Kids	Married with no Kids	Single	
0	9	3	21	33
1	6	3	5	14
Total	15	6	26	47

It is possibly due to the following reasons;

a. Career concern. Their forecast error will be heavily penalized than the errors made by experienced forecasters. Still, for the sake of career growth and to stand out, they take the risk.
b. Few opportunities to switch jobs in the initial phase of their career. Hence, they want to advance with a performance that stands out.
c. Coming from the academia, they have the inclination to use tools that may not be used generally by existing analysts. Hence, their forecast may differ from others and they may have more confidence and credence in their numerical capabilities to understand the workings of capital markets and frictions.
d. No past forecasting success in a career which could act as a cushion if they make errors.

To investigate the relationship between age and herding, we categorize analysts here as young and old. Analysts less than 30 years old are considered young and analysts more than 30 years of age are considered old. It can be seen from table 6 that 75% of the young analysts do not follow market consensus as compared to 55% of old ones. This further reinforces the above findings.

Table 6
Age Group and Herding

Market Consensus	Age Group		Total
	Young	Old	
0	26	7	33
1	9	5	14
Total	35	11	47

Nonetheless, when we test the association between herding and characteristics like age, income, designation, appraisal frequency and education by using non-parametric tests, such as Pearson's Chi-square, likelihood-ratio Chi-square, Goodman and Kruskal's Gamma, Kendall's Tau and Cramer's V, we find that there is no association between the tendency to herd and these characteristics.

However, we find that there is an association between herding and marital status which implies that single analysts at a young age and with minimal experience relatively herd less than married analysts who are older, more conservative and well-connected in their professional networks to receive tips from peers. Furthermore, this is further substantiated by the positive evidence we found for the association between herding and experience. Older analysts with much better connections within the analyst community and with finance managers in the real sector corporations are better able to make a judgement about market consensus and hence use it in their favour. On the other hand, younger analysts may have less information about the market and hence they tend to depend more on their skills rather than the asymmetric and private information prevailing in the market. Finally, higher risk taking may be explained by a higher degree of overconfidence, less herding behaviour, or a lower degree of risk aversion (Menkhoff, Schmidt & Brozynski, 2006).

In Table 7, we depict the confidence ratio of the analysts and we observe that analysts are overconfident and this result is consistent with earlier studies as well. People tend to be overconfident about their abilities, trade more than necessary, and create noise and volatility in the market which is capitalized by other investors and hence abnormal returns do tend to occur with some

strategies and to some participants. It can be seen from table 7 that less than 5% people have rated themselves below average. More than one-third of analysts in the sample have rated themselves above average.

Table 7
Self-Rating by Respondents

Self-Rating	Frequency	Percent	Cumulative Percent
Above Average	28	059.57	059.57
Average	16	034.04	093.62
Below Average	03	006.38	100.00
Total	47	100.00	

When we test the association between self-rating and characteristics like experience, designation, appraisal frequency, marital status and education by using Pearson's Chi-square, likelihood-ratio Chi-square, Goodman and Kruskal's Gamma, Kendall's Tau and Cramer's V, we find that there is no association between the tendency to overrate one's ability and these characteristics as per the non-parametric tests.

However, when we test the association between self-rating and income, we find that both are associated. High-income analysts tend to rate themselves highly as compared to low-income analysts. Thus, it shows that past performance leading to higher compensation makes the analyst more confident about their skills and abilities. On the other hand, analysts who have yet to advance in their careers and are earning lower incomes at the moment tend to have less confidence in their abilities to predict and time the market better than the average analyst. We also find that there is an association between age group and self-rating. Since age correlates with experience and income, it implies that with time analysts gain more confidence. Furthermore, past accomplishments make them advance in their careers and it further boosts their self-confidence.

Table 8 shows that promotion within the financial analysis industry is not necessarily a function of experience. While junior

analysts take time to progress, not all analysts who have spent the same amount of time in the profession go up the ladder necessarily. This is also substantiated a bit by the fact that the correlation between income and experience is 0.38.

Table 8
Experience by Designation

Designation	Mean Experience
Fund Manager	7.09
Head of Research	8.75
Stock Broker	9.75
Senior Analyst	7.61
Junior Analyst	3.01

Table 9 shows the appraisal frequency. It can be seen that there is a tendency in some organizations to conduct appraisal more frequently as compared to others. Mostly, performance appraisal is conducted on an annual basis.

Table 9
Appraisal Frequency

Experience	Mean Experience
Monthly	8
Quarterly	6
Half Yearly	3
Annually	30

Table 10 shows the relative frequency with which different valuation methods are used by the analysts. We categorize their choices on the bases of their educational background.

Table 10
Security Valuation Methods Used by Education

Education / Methods	CAPM (%)	MFM (%)	DDM (%)	TA (%)	SFM (%)	TS (%)	MC (%)
Local Graduate	47.1	35.3	58.8	35.29	17.7	5.88	17.7
Local Masters	47.1	23.5	52.9	29.4	11.8	5.9	35.3
Foreign Graduate	50.0	50.0	50.0	100	50.0	100	50.0
Foreign Masters	50.0	100	50.0	100	100	100	50.0
ACCA	50.0	100	50.0	100	50.0	100	50.0
CFA	71.4	28.60	100.0	42.9	42.9	14.3	26.6

Note: CAPM - Capital Asset Pricing Models, MFM- Multi-Factor Models, DDM - Dividend Discount Models, TA - Technical Analysis, SFM - Simulated Financial Models, TS - Time Series Tools, MC - Capital Asset Pricing Model.

Table 11 shows the relative frequency with which different valuation methods are used. It can be seen that DDM is used most frequently, followed by CAPM, technical analysis and market consensus.

It is interesting to note that one-third of respondents in the sample use technical analysis; hence, they do not believe that weak form efficiency strictly holds for Pakistan's premier equity market. Hence, they believe that past price formations provide useful information and can be used to earn excess returns. We also find that almost one-third of the respondents tend to follow market consensus. Since few large block trades historically have moved stock prices away from fundamental values, analysts do not want to deviate too much from the market consensus. Time series tools are used by only 3 out of 47 respondents. It may very well be because of the lack of relevant skill set since most business schools and curriculum of professional certifications do not provide a rigorous training for using these tools. It also points towards the fact that economics schools need to fill this gap as they alone train their students in econometric techniques.

Table 11
Security Valuation Methods

Valuation Method	Number of Respondents	Percent (%)
CAPM	24	51.1
Multi-Factor Models	12	27.7
Dividend Discount Models	29	61.7
Technical Analysis	16	34.0
Simulated Financial Models	10	21.3
Time Series	3	06.4
Market Consensus	14	29.8

5. Conclusion

In this study, we have analyzed the investment decisions made by professional investors. We have attempted to analyze various links between demographic variables and the choice of security valuation methods. We have also strived to find evidence for various behavioural finance concepts and hypotheses like herd behavior and overconfidence, for instance. Our results indicate the prevalence of herding and overconfidence. We also found that analysts extrapolate past into the future forecasts. We also discovered an association between demographic characteristics and the choice of security valuation methods. Finally, we found that younger analysts herd less than the older ones.

References

Arnswald, T. (2001). *Investment behaviour of German equity fund managers - An exploratory analysis of survey data* (Deutsche Bundesbank Working Paper No. 08/01). Frankfurt, Germany: Economic Research Centre of the Deutsche Bundesbank.

Bliss, R. T., & Potter, M. E. (2002). Mutual fund managers: Does gender matter?. *The Journal of Business and Economic Studies, 8*(1), 1–15.

Brown, N. C., Wei, K. D., & Wermers, R. (2013). Analyst recommendations, mutual fund herding, and overreaction in stock prices. *Management Science*, *60*(1), 1–20. doi: 10.1287/mnsc.2013.1751

Chen, Q. & Jiang, W. (2005). Analysts' weighting of private and public information. *Review of Financial Studies*, *19*(1), 319–355. doi: 10.1093/rfs/hhj007

Cheng, Y., Liu, M. H., & Qian, J. (2006). Buy-side analysts, sell-side analysts, and investment decisions of money managers, *Journal of Financial and Quantitative Analysis*, *41*(1), 51–83. doi: 10.1017/S0022109000002428

Chevalier, J., & Ellison, G. (1999). Career concerns of mutual fund managers. *The Quarterly Journal of Economics*, *114*(2), 389–432. doi: 10.1162/003355399556034

Werner F. M., De Bondt, & Thaler, R. (1985). Does the stock market overreact? *The Journal of Finance, 40*(3), 793-805. doi: 10.2307/2327804

Elliott, W. B., Hodge, F. D., & Jackson, K. E. (2010). The association between nonprofessional investors' information choices and their portfolio returns: the importance of investing experience. *Contemporary Accounting Research*, *25*(2), 473–498. doi: 10.1506/car.25.2.7

Jensen, M. C. (1968). The performance of mutual funds in the period 1945–1964. *The Journal of Finance*, *23*(2), 389–416. doi: 10.1111/j.1540-6261.1968.tb00815.x

Kahneman, D., & Tversky, A. (2013). Prospect theory: An analysis of decision under risk. In *Handbook of the fundamentals of financial decision making,* (Part I, pp. 99–127). doi: 10.1142/9789814417358_0006

Menkhoff, L., Schmidt, U., & Brozynski, T. (2006). The impact of experience on risk taking, overconfidence, and herding of fund managers: Complementary survey evidence. *European Economic Review, 50*(7), 1753–1766. doi: 10.1016/j.euroecorev.2005.08.001

Odean, T. (1999). Do investors trade too much? *American Economic Review, 89*(5), 1279–1298. doi: 10.1257/aer.89.5.1279

Qureshi, S. A., Rehman, K., & Hunjra, A. I. (2012). Factors affecting investment decision making of equity fund managers. *Wulfenia Journal, 19*(10), 280–291. Retrieved from http://mpra.ub.uni-muenchen.de/60783/

Shefrin, H., & Statman, M. (1985). The disposition to sell winners too early and ride losers too long: Theory and evidence. *The Journal of Finance, 40*(3), 777–790. doi: 10.1111/j.1540-6261.1985.tb05002.x

Schubert, R., Brown, M., Gysler, M., & Brachinger, H. W. (1999). Financial decision-making: Are women really more risk-averse? *American Economic Review, 89*(2), 381–385. doi: 10.1257/aer.89.2.381

Suto, M., & Toshino, M. (2005). Behavioural biases of Japanese institutional investors: Fund management and corporate governance. *Corporate Governance: An International Review, 13*(4), 466-477.

To cite this article:
Shaikh, S. A. (2019). Investment Behaviour of Analysts: A Case Study of Pakistan Stock Exchange. *Journal of Finance and Accounting Research, 1*(1), 52–69. doi: 10.32350/JFAR.0101.04

Received: April 27, 2018
Last Revised: December 6, 2019
Accepted: February 25, 2019