International
Journal
Of Advanced Research in Engineering & Management (IJAREM)
ISSN: 2456-2033 || PP. 45-52

Role of Behavioral Biases and Demographic Variables in Stock Market: A Cross Country Study

Mukti Katariya[1], Dr. Seema Joshi[2]
* *(PhD student, North Maharashtra University, Jalgaon, India)*
** *(Director, School Of Management Studies, North Maharashtra University, Jalgaon, India,*

Abstract: Extreme volatility has plagued financial markets worldwide since the 2008 Global Crisis. Investors' sentiment has been one of the key determinants of market movements. In this context, studying the role played by emotions like fear, greed and anticipation, furthermore demographic variables like age, gender, income, education in shaping up investment decisions seemed important. Behavioral Finance is an evolving field that studies how psychological factors affect decision making under uncertainty. This research paper seeks to find the influence of certain identified behavioral biases: overconfidence, representativeness, herding, anchoring, cognitive dissonance, regret aversion, gamblers' fallacy, mental accounting, hindsight bias, loss averseness, risk tolerance, irrational thinking and demographic variables: gender, age, income, language and education, marital status, occupation, religion, and socio-professional category on the decision making process of individual investors in the Indian stock market.
Recent studies on the behavior of individual investors' have shown that investors do not act in a rational manner. Several behavioral factors influence their investment decisions in stock markets. The present study aims to review the research studies and literature of various country to gain knowledge about key factors that influence investment behavior in different countries and the ways these factors impact investment risk tolerance and decision making process among men and women and among different age groups.

Keywords: Behavioral bias, demographic variables, perception of investors, investors' decision, rationality and financial literacy, risk tolerance

I. Introduction

Much of the economic and financial theories presume that individuals act rationally in the process of decision making, by taking into account all available information. But there is evidence to show repeated patterns of irrationality in the way humans arrive at decisions and choices of stock also affected by age, gender, marital status. Behavioral finance, a study of the market that draws on psychology, throws light on why people buy or sell stocks and why sometimes do not buy or sell at all. The fact that even the most prominent and well-educated investors were affected by the collapse of the speculative bubble in the 2008 subprime crisis proved that something was fundamentally missing in the traditional models of rational market behavior.

In this study, the aim is to establish the existence of such fundamental issues, driven by various psychological biases and demographic variables in the investment decision-making process. Behavioral Finance is an evolving field that studies how psychological factors affect investment decision.

According to Shefrin (2001), 'Behavioral finance is the study of how psychology affects financial decision making and financial markets.'

Behavioral economists firmly believe that psychological factors influence investment decisions. Demographic variables also affect on choice of investment. Today's investment decisions demand a better understanding of individual investors' behavioral biases and demographic factors. In this context, it seems relevant to check whether the behavioral and demographic factors have an influence on the decision making process of portfolio investors.

II. Research Objectives

- To test the applicability of behavioral finance theories on investors.
- To check impact of demographic variables on investment decisions.
- To study the concept of behavioral bias and impact on stock market in different country.

- To check impact of demographic factors on investors' decision in different country
- To obtain the risk profile of the households and relate this to savings and investment behaviour.
- To determine the various factors influencing individual investors' behavior as explored by several researchers in different countries

III. Methodology:

The present paper is a review paper. Various papers on determinants of investment behavior across different countries have been taken for the review.

IV. Review of Literature

Economists, sociologists and psychologists have all attempted to explain investor behavior in various ways. Economists' enquiries into investor behavior have focused largely on the "rationality" or "irrationality" of investor decision-making processes. Sociologists explain investor behavior by focusing on investors social environments. Psychologists explain investor behavior by focusing on individual characteristics.

The research in behavioural finance is comparatively less in India, when compared to other developed countries

According to Nofsinger (2001), the field of finance has evolved over the past few decades based on the assumption that people make rational decisions and that they are unbiased in their predictions about the future. Investors are thought of as a rational lot that take carefully weighted economically feasible decisions every single time.

Thaler(2005) A rational investor can be defined as a one that always (i) updates his beliefs in a timely and appropriate manner on receiving new information; (ii) makes choices that are normatively acceptable .

Harlow and Brown (1990) observes that psychologists tend to believe that an individual's choice is primarily determined by factors unique to the particular decision setting, whereas economists assume that there is some individual specific mechanism playing a common role in all economic decisions.

Kabra, G., Mishra, P.K. and Dash M.K. (2010), studied the factors effecting investment behavior and concluded that investors age and gender are the main factors which decide the risk taking capacity of investors.

Dr. Sahni, D. (July-August). Paper focuses on loss averseness of investors and anchoring bias. The finding of the paper shows that investors are risk lovers when confronted with losses and risk averse in gains. The Indian investors are found to be loss averse, i.e., there is difference in investors' behavior in case of losses and gains. The paper also reveal investors' perception about market trend is influenced by the past performance of a stock market on three consecutive days, which shows that the anchoring theory is relevant in case of Indian investors behaviour in stock market.

Yosra Mefteh Rekik and Younes Boujelbene (2013), Authors find out Tunisian investors do not always act rationally while making investment decisions. The study concluded that behavioural bias like herding attitude, representativeness, anchoring, loss aversion, and mental accounting all influence the Tunisian investors' perception of their decision making processes but there is an absence of overconfidence bias in the Tunisian stock market. Tunisian investors seem to be under confident, hesitant and very sensitive to others' reactions and opinions. The other finding related to the interaction between demographic variables and financial behavioral factors particularly provided that the variables like gender, age, socio-professional category, and experience all seem to have an influence on the behavior of investors operating on the Tunisian Market. This study provides that people at certain age, are less subject to psychological biases as they become more experienced while as elder investors who have less financial knowledgeable and have lower incomes are subject to behavioral biases.

De Bondt et al., (1985) published a paper about behavioral finance in which they asked the following question: "Does the stock market overreact?", the article gave evidence to support the hypothesis that cognitive bias (investor's over- reaction) for a long series of bad news could produce predictable mispricing of stocks traded on the NYSE.

Economou, Kostakis and Philippas (2010) examined herd behavior in extreme market conditions using daily data from the Greek, Italian, Portuguese and Spanish stock markets for the years 1998- 2008 i.e. the existence of asymmetric herding behavior associated with market returns, trading volume, and return volatility. Along with this, they also investigated the presence of herd behavior during the global financial crisis of 2008

Engin Demirel et al., (2011), studied the role of demographic and financial behavioral factors in investment decisions. It showed that gender interacts with five financial behavioral factors i.e. Overreaction, herding, cognitive bias, irrational thinking, overconfidence. The level of individual savings interacts with only four of the financial behavioral factors viz; overreaction, herding, cognitive bias, and irrational thinking.

Merikas et.al.,(2003). The study was conducted to analyze factors influencing Greek investor behavior on the Athens Stock Exchange. The results indicate that investors' stock purchase decisions based economic criteria combined with other diverse variables. The paper concluded that there is a certain degree of correlation between the factors that behavioral finance theory and previous empirical evidence identify as the influencing factors for the average equity investor. The behavior of active investors in the Athens Stock Exchange (ASE) influenced by the overall trends of ASE this shows presence of hindsight bias.

Kaleem, Wajid andHussain (2009), in a study of factors affecting financial advisors perception in portfolio management in Pakistan, found that age, income, language and orientation of education have a significant role in determining the investment style of an investor.

Geetha and Ramesh (2012), studied the relevance of demographic factors in investment decisions in Tamilnadu, India, and claimed that the demographic factors have a significant influence over some of the investment decision elements, while insignificant influence was found on some other elements.

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

Alleyne and Broome (2010) have examined the investment decisions among students using the theory of planned behavior and risk propensity among future investors. They say that the theory of planned behaviour is a significant predictor of investment intentions. The findings further show that attitudes and referent groups (peers, family and significant others) and beliefs about potential obstacles and opportunities significantly predict intentions to invest. They also found that the influence of friends and relatives, and easy access to funds are significant predictors of investment intentions of students.

Shanthikumar and Malmendier (2003) tried to answer the question: Are small investors' naïve? They found that large investors generate abnormal volumes of buyer-initiated trades after a positive recommendation only if the analyst is unaffiliated. Small traders exert abnormal buy pressure after all positive recommendations, including those of affiliated analysts.

Krishnan and Booker (2002) analyze the factors influencing the decisions of investor who use analysts' recommendations to arrive at a short-term decision to hold or sell a stock. The results indicate that a strong form of the analyst summary recommendation report, i.e., one with additional information supporting the analysts' position further, reduces the disposition error for gains and also reduces the disposition error for losses this show herd mentality among investors.

Nagy and Obenberger (1994) examined factors influencing investor behavior. They developed a questionnaire that included 34 questions. Their findings suggested that classical wealth –maximization criteria are important to investors, even though investors employ diverse criteria when choosing stocks. Contemporary concerns such as local or international operations, environmental track record and the firm's ethical posture appear to be given only cursory consideration. The recommendations of brokerage houses, individual stockbrokers, family members and co-workers also influence investors' decisions i.e. herd behaviour and peer pressure play vital role in decision making process.

Langer (1975) finds that self-reported risk tolerance does the best job of explaining differences in both portfolio diversification and portfolio turnover across individual investors.

Dunham (1984) admits that although personality factors can change over an extended period of time, the process is slow and tends to be stable from one situation to another. Therefore, personality factors are expected to influence the decision making behavior of an individual.

Statman (1988) observed that people trade for both cognitive and emotional reasons. They trade because they think they have information, when in reality they make nothing but noise and trade only because trading brings them joy and pride. Trading brings pride when decisions made are profitable, but it brings regrets when results are losses. Investors try to avoid the pain of regret by avoiding realization of losses, employing investment advisors as scapegoats and avoiding stocks of companies with low reputations.

Tomola Marshal Obamuyi (2013) Investment decisions of investors in Nigeria are influenced by certain identified factors. The most important principal factors are past performance of the Company's stock, expected stock split/capital increases/bonus, dividend policy, expected corporate earnings and get-rich-quick. These factors were significantly influenced by gender, age, marital status and educational qualification of investors in the Nigerian capital market. Specifically, the investment decisions of investors relating to past performance of the company's stock differ based on their socio-economic characteristics (age, gender, marital status and educational qualification).

Kannadhasan (2006) examined the factors that influence the small investor's decision in investing. The decision of the small investors are based on various dependent variables viz., gender, age, marital status, educational level, income level, awareness, preference and risk bearing capacity

According to Kent et al. (2001), the most common behaviour that observe among investors while making investment decision are: (a)Investors often do not participate in all asset and security categories, (b)Individual investors exhibit loss-averse behaviour, (c) Investors use past performance as an indicator of future performance in stock purchase decisions, that show hindsight bias (d)Investors trade too aggressively, (e) Investors behave on status quo, (f) Investors do not always form efficient portfolios, (g) Investors behave parallel to each other, it exhibit follow the mob mentality and (h) Investors are influenced by historical high or low trading stocks, it show cognitive bias among investors.

Chandra (2011) collected the data from survey to know the factors influencing Indian individual investor behaviour in stock market. Using univariate and multivariate analysis and found five major factors that affect the investment behaviour of individual investor in stock market namely prudence and precautions attitude, conservatism, under confidence, informational asymmetry and financial addition .

Mittal and Vyas (2007) have investigated how investment choices have been affected by the demographics of the investors. Such knowledge would be highly useful to the financial advisors as it would help them advise their clients regarding investments which are appropriate with respect to their demographic profile. The salaried class people preferred to invest their money in equities and mutual funds while business classes have shown an inclination to invest their money in debenture/bonds and real estate or bullions.

Ajmi (2008) used a questionnaire to know determinants of risk tolerance of individual investors and collected responses from 1500 respondents. He concluded that the men are less risk averse than women, less educated investors are less likely to take risk and age factor is also important in risk tolerance and also investors are more risk tolerance than the less wealthy investors.

National council of Applied Economic Research (NCEAR) (2011) conducted a survey on *How household save and invest: Evidence from NCAER Household survey.* From the survey it is noticed that household with higher levels of education and fixed asset, businessman, white-collar workers tend to invest more in the secondary market. Unmarried investors tend to invest in the complex derivative market. Life cycle plays an important role in influencing the saving and investment behaviour of households. Male investors invest more in IPOs as compared to female investors. Household with higher education opted for investments of longer duration. The degree of risk-taking is directly proportional to age, income, occupation (businessman and white collar worker) education and inverse relationship with marital status and gender.

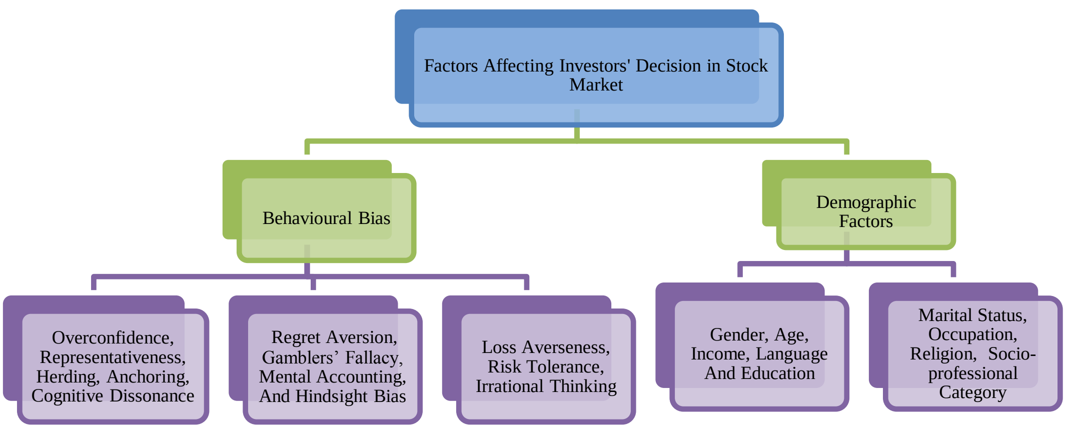

Figure 1.1 Factors affecting Investors' Decision

Table 1.1 Biases, Effects on Investor, and Consequences

NAME OF BIAS	KEY EFFECTS ON INVESTOR	CONSEQUENCE
Overconfidence	Too many trades, too much risk, failure to diversify	Pay too much brokerage and taxes, chance of high losses
Representativeness	Tendency to associate new event to a known event and make investments based on it	Purchasing overpriced stocks
Herding	Lack of individuality in decision making	Bubbles, and bubble bursts
Anchoring	Tendency to consider logically irrelevant price level as important in the process of decision making	Missed investment opportunities, or bad entry timing into the market
Cognitive Dissonance	Ignore new information that contradicts known beliefs and decisions	Reduced ability to make rational and fair investment decisions
Regret Aversion	Selling winners too soon, holding losers too long	Reduced returns
Gamblers' Fallacy	Taking too much risk after a lucky win	Chance of high losses
Mental Accounting	Low or no diversification	Irrational and negative effects on returns
Hindsight	The tendency to feel that a past event was obvious when it really was not, at onset	Incorrect oversimplification of decision making

(Source: Subash, Master Thesis, 2012, p.27)

V. Findings

a. Influence of demographic variables on investment decision of investors:-

1. Indian investors' age and gender are the main factors which decide the risk taking capacity of investors. Other demographic factors also influence investment decision of Indian investors.
2. Demographic variable like gender, age, socio-professional category, and experience have an influence on the behavior of Tunisian investors.
3. Demographic variables like age, income, language and orientation of education have a significant role in determining the investment style of Pakistan investor.
4. Age, education, accessibility to the internet and interaction between the investor and his/her broker influenced investors' trading decisions affect on Amman Stock Exchange, Jordan
5. Investment decisions of investors in Nigeria are influenced by gender, age, marital status and educational qualification of investors in the Nigerian capital market
6. Small investors are based on various dependent variables viz., gender, age, marital status, educational level, income level, awareness, preference and risk bearing capacity
7. The degree of risk-taking is directly proportional to age, income, occupation (businessman and white collar worker) education and have inverse relationship with marital status and gender.
8. The men are less risk averse than women, less educated investors are less likely to take risk and age factor is also important in risk tolerance and also investors are more risk tolerance than the less wealthy investors i.e. demographic variable influence risk tolerance level of investors.

b. Influence of Behavioural bias on investment decision of investors:-

1. Indian investors are loss averse and their decision influenced by anchoring bias.
2. Tunisian investors' perception show impact of behavioural bias like herding attitude, representativeness, anchoring, loss aversion, and mental accounting.
3. The behavior of active investors in the Athens Stock Exchange (ASE) influenced by the overall trends of ASE this reflects presence of hindsight bias.
4. Attitudes and referent groups (peers, family, friends, and relatives), and beliefs about potential obstacles and opportunities influence investment intentions of students.
5. Recommendations of brokerage houses, individual stockbrokers, family members and co-workers also influence investors' decisions i.e. herd behaviour and peer pressure play vital role in decision making process. The existence of asymmetric herding behavior associated with market returns, trading volume, and return volatility. Along with this, it is found that existence of herd behaviour play important role during the global financial crisis of 2008.
6. Self-reported risk tolerance explains the differences in both portfolio diversification and portfolio turnover across individual investors.
7. Personality factors are expected to influence the decision making behavior of an individual
8. Past study reveals that investors trade for both cognitive and emotional reasons. Cognitive bias (investor's over- reaction) for a long series of bad news could produce predictable mispricing of stocks traded on the NYSE.
9. Behaviour of Indian individual investor in stock market namely prudence and precautions attitude, conservatism, under confidence, informational asymmetry and financial addition affect stock purchase decisions.

VI. Recommendation / Suggestions

1. Indian investors should study strategy of Warren Buffett, Benjamin Graham or Philip Fisher while opt for investment. If investors adopt strategies of successful investors than they can minimize losses and earn more profit
2. SEBI should organize 'Investors' awareness programme' to develop financial literacy among investors.
3. Investors must analyse company on fundamental ground then invest in company rather to follow news channels, broker's advice, and referent groups' suggestions.
4. Investors should aware about their risk tolerance level which help them to manage their portfolio.
5. Investors should hold their profit making stock and sell their loss making stocks to minimize losses and gaining more profit.
6. Investors should 'always' use stop loss before investing in stock. It protects them from huge losses.
7. Investors should control behavioural biases at time of investment.
8. Investors must adopt strategy "to buy a company not its stock" so that electronic media, print media or market fluctuation has less impact on investor's decision.
9. While investing one should look at companies that have stood the test of time, undervalued & companies which aggressively create larger market for their product.

VII. Conclusions

From the review of above studies, it can be concluded that there are numerous determinants that influence the individual investor's behavior in stock market across different countries. Some factors have great influence while other have slight role in influencing the behavior of an individual investor. The most common determinants that have a significant impact on the investors' behavior are herding, over-reaction, cognitive bias, irrational thinking, confidence (over or under), gender, age, income, education, influence of people's opinion (friends or family).

VIII. Future Work

a) There exist other factors which influence investment decision of investors like economical, environmental, technological, social.
b) Research can be carried out in the area of importance of fundamental analysis over technical analysis.
c) Research can also be carried out role of behavioural bias in bear and bull market phase.

References

Journal Papers:

[1]. Ajmi Jy. A. (2008). Risk Tolerance of Individual Investors in an Emerging Markets, International Research Journal of Finance and Economics, 17 (2), 15-26.

[2]. Chandra, Abhijeet and Kumar, Ravinder (2011). Determinants of Individual Investor behaviour: An Orthogonal Linear Transformation Approach, available at http://mpra.ub.uni-uenchen.de/29722/MP

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

[4]. DeBondt, W. & Thaler, R. (1985) Does the Stock Market Overact?. *Journal of Finance*, *40*, 793-808.

[5]. E. Demirel et al, (2011). "Interaction between Demographic and Financial Behavior Factors in Terms of Investment Decision Making", *International Research Journal of Finance and Economics*, ISSN 1450-2887 N. 66.

[6]. Economou, Fotini., Kostakis, Alexandros., Philippas, Nikolaos. (2010). An Examination of Herd Behavior in Four Mediterranean Stock Markets. Athens: 9th Annual Conference, European Economics and Finance Society

[7]. Fares, A. R. F., & Khamis, F. G. *(2011).* Individual Investors' Stock Trading Behavior at Amman Stock Exchange. *International Journal of Economics and Finance, 3(6), 128 – 134*

[8]. Geetha, N., & Ramesh, M. (2012). A Study on Relevance of Demographic Factors in Investment Decisions. *International Journal of Financial Management (IJFM), 1(1), 39-56.*

[9]. Harlow W V and Keith C Brown (1990), The Role of Risk Tolerance in The Asset Allocation Process: A New Perspective, *Association for Investment Management*

[10]. Kabra, G., Mishra, P.K., Dash, M. K. (2010). Factors influencing investment decision of Generations in India: An Econometric study. *Asian Journal Of Management Research*, *4* (2), 305-326

[11]. Kaleem, A., Wajid, R.A., & Hussain, H. S. (2009). Factors Affecting Financial Advisor's Perception in Portfolio Management: With Reference to Pakistan. *Oxford Business and Economics Conference Program*, June 24-26.

[12]. Kannadhasan, M. (2006). Risk Appetite and Attitudes of Small Investors with Special Reference to Capital Market. *The Management Accountant*, 448- 453.

[13]. Langer, E. J. (1975). The Illusion of Control. *Journal of Personality and Social Psychology*, *32*(2), pp 311-328.

[14]. Merilkas, A. Merilkas, A. and Prasad, D. (2003). Factors influencing Greek investor behavior on the Athens stock exchange, *Paper presented at the Annual Meeting of the Academy of Financial Services, Denver, Colorado*, October 8-9 2003.

[15]. Mittal, Manish, Vyas. R.K. (2007). Demographics and Investment Choice among Indian Investors. *ICFAI Journal of Behavioural Finance*, *4* (2),12-20.

[16]. Nagy,R.A. and Obenberger, R.W., (1994) "Factors influencing investor behavior", *Financial Analysts Journal*, *Vol.50*, pp.63-68

[17]. Rakesh, H.M. (2013). Gambler's fallacy and behavioral finance in the financial markets: A case study of Bombay Stock Exchange. *International Journal of Business and Management Invention* ,*2*(12),1-7

[18]. Sahni, D. (n.d.). Behavioral finance: Testing applicability on Indian investors.

[19]. Shafi, M. (2014). Determinants Influencing Individual Investor Behavior In Stock Market: A Cross Country Research Survey. *Arabian Journal of Business and Management Review (Nigerian Chapter.)* *2*(1),60-71

[20]. Statman Meir (1988), "Investor Psychology and Market Inefficiencies", in Katrina F Sherrerd (Ed.), Equity Markets and Valuation Methods, The Institute of Chartered Financial Analysts, Charlottesville, Virginia

[21]. Suman, & Warne, D.P. (2012). Investment behaviour of individual investors in stock market. *International Journal of Research in Finance & Marketing*, *2*(2), 432-439

[22]. Tomola, M. O. (2013). Factors Influencing Investment Decisions in Capital Market:A study of Individual Investors in Nigeria. ISSN 2029-4581. *Organizations And Markets In Emerging Economies*, Vol. 4, No. 1(7)

[23]. Yosra, M. R.and Younes, B. (2013). Determinants of Individual Investors' Behavior: Evidence from Tunisian Stock Market. *IOSR Journal of Business and Management (IOSR-JBM,) e-ISSN: 2278-487X. 8*(2), *109-119.*

Books:

[24]. Dunham Randall B (1984) *Organizational behavior: People and processes in management*. The University of Michigan: Irwin(1984), ISBN-10: 0256026270, ISBN-13: 978-0256026276

[25]. Nofsinger, John R.2001. *Investment madness: how psychology affects your investing – and what to do about it*. USA: Pearson Education

[26]. Thaler, Richard H. (2005). *Advances in Behavioral Finance, Volume II*. USA: Princeton University Press

Theses:

[27]. Subash, R. (2012). *Role of Behavioral Finance in Portfolio Investment Decisions: Evidence from India*, Master Thesis, Charles University in Prague, Faculty of Social Sciences, Institute of Economic Studies, 1-92

Working Papers:

[28]. Alleyene and Broome, An exploratory study of factors influencing investment decisions of potential investors, *Central Bank of Barbados Working Paper*, 2010

[29]. Shanthikumar,D. and Malmendier, (2003), Are small investors naive?, *Stanford University Working Paper*, 2003

[30]. National council of Applied Economic Research (NCAER) (2011). *How household save and invest: Evidence from NCAER household survey.* Retrieved from http://www.sebi.gov.in/cms/sebi_data/attachdocs/1326345117894.pdf