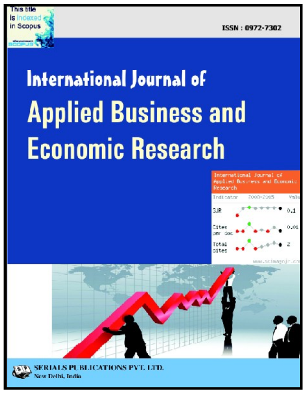

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Recent Developments and Review in Behavioral Finance

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Abstract: *Purpose:* The present study probes into the existing literature available on the area of Behavioral Finance (BF) which is an emerging field of finance. The study aims to expand the domain of Behavioral Finance by bringing a deeper understanding of the concepts and literatures. A comprehensive review of literature has been done based on different criteria and reference.

Design/methodology/approach: The conceptual evolution of Behavioral Finance (BF), an insightful dialogue on the progression in the field is used as an approach to the study. A wide array of concepts, discussions and representation of concepts is taken from the database from 1996 to 2015.

Findings: After reviewing the recent scenario of research in the field of Behavioral Finance, a future agenda for the current research has been formulated.

Research limitations/implications: Because of the limited time frame, some important studies might have been left out. Therefore, researchers are encouraged to take a different time frame for their study.

Practical implications: The research may well provide a valuable insight for the future researcher, practitioners and prober as considerable developments need to be done in the area of Behavioral Finance.

Originality/value: The paper focuses on the concepts and developments in Behavioral Finance. The author provides a new opportunity to tap the developments of the field in a greater detail.

Keywords: Behavioral Finance, Psychology, Investment Behavior, Conventional Finance, Behavioral Bias, Decision Making

1. INTRODUCTION

The past twenty years have witnessed rise in volatility and fluctuations in the equity markets across the world. There are a cascading effect of equity market bubble and uncertainty on the happenings around the globe. Conventional finance tools and techniques cannot always predict and control the shape of the market. Over a period of twenty years, conventional finance researchers and behavioral finance researchers are having a debate on whether market efficiency really works in the event of uncertainty. Conventional finance focuses on modern portfolio theory and an efficient market hypothesis, whereas behavioral finance believes that markets are not rationaland inefficient in nature (Ricciardi and Simon, 2000).

The first half of the 20th century was more driven by social science, where psychologists such as; Irving Fisher and John Mynard Keynes emphasized on the importance of psychological factors in ascertaining the economic behavior of market participants (Loewenstein, 1992). The theory of cognitive dissonance was introduced by Leon *et al.,* (1956) as a new concept in social psychology. Cognitive dissonance occurs when there is a conflicting thought between two beliefs.It results in unpleasant experience which leads to change in beliefs. Kahnemann and Tversky (1979) presented prospect theory as an alternative model to expected utility framework. People are risk averse in the case of gains and risk seeker in the case of losses. Theories under conventional finance assume to be valid under maximisation of objective function in relation to risk and return. Proponents of behavioral finance believe that the rational models under conventional finance do not consider human emotions. The Capital Asset Pricing Model by Trenor, Sharpe and Lintner; Efficient Market Hypothesis by Eugene Fama; Markowitz Portfolio Theory by Harry Markowitz, Expected Utility Theory by Von Neumann and Morgenstern have laid the foundation of conventional finance. Behavioral finance (BF) theories include model of Bounded Rationality by Herbert Simon, Theory of Overreaction and Underreaction by Barberis, Shleifer and Vishny, Behavioral Asset Pricing Theory and Behvioral Portfolio Theory by Meir Statman etc. Behavioral finance is the study of emotions and psychology while making investment decision. It combines the precept of psychology and social science for understanding human judgment in decision making.

Various factors such as; emotional, social, demographic, personal factors, information, biases as subjective factors, mood, shame, pride etc. affects human behavior and their action on the aggregate market behavior. These factors lead market participants to take a departure from the rational thinking and conventional models of finance. The thought that comes to the mind is whether the theoretical models based on the efficient market hypothesis and mean variance theory provides a plausible explanation of the role of cognition on investment behavior. Statman (2008) mentioned that investors under behavioral finance are normal and not rational; markets are not efficient; investors do not design their portfolio as per mean variance theory and expected returns are measured by more than only risks.

Over the last two decades, this field has added many dimensions in relation to the aggregate participants behavior. Both at the micro level and a macro level, it helps in ascertaining the individual and aggregate behavior of the market. There is a need to analytically understand the comprehensive field of behavioral finance, its impact on the decision making, existence of behavioral biases and their manifestation in terms of action. A deep understanding of the concepts and developments in the field of behavioral finance would bring a profound inspection and investigation into the overall body of knowledge.

Hence, the paper first discusses the evolution of behavioral finance. Second, the detailed investigation in terms of variousof criteria for the extensive review of literature is done. The third classification is done on the basis of year wise publication, journal wise publication, period wise publication, nature of study wise publication and behavioral biaseswise publication. Finally, the emphasis is made on preparing a future course of action in analyzing the field of research by practitioners and researchers.

Evolution of Behavioral Finance

The concept of behavioral finance has undergone many changes and developments. Let's first start with the word behaviorism. This word has belonged to the 20th century and introduced by John Watson in 1913. He introduced *psychological behaviorism*, which is also called *philosophical behaviorism*. *Psychological behaviourism* deals with psychology and the study of the behavior of individual organisms. Those times, psychology was studied as a science of behavior (Watson, 1913). Other researchers such as; B.F.Skinner, Edwin Guthrie, Edward Tolman, Clark Hull and Kenneth Spence have contributed to the psychological behaviorism.

Further, Friedman and Savage (1948) originated the concept of application of both insurance and lottery tickets at one go.It suggests that people can behave differently in different situation. Another term '*bounded rationality*'was articulated by Herbert Simon in 1950. Simon (1955) advocated that decision makers are rational, goal oriented and adaptive, but due to human cognitive and emotional architecture, they sometimes fail occasionally in important decisions. The limitation caused by the cognitive ability rejects the full rationality and therefore bounded rationality persists. During the last twenty years, there is a marked increase in the number of contributions to the field by numerous economists and researchers. They are trying to know how human elements can be brought into decision making models based on rational framework.

The constancy of conventional finance models started to be challenged in the 1980's. The problem of excess volatility brought incongruity to the validity of those models. Shiller (2003) argued that there are several bias that affect an individual. The first thing that he mentioned was the feedback models which suggest that individual trades based off another investor rather than of information which is new to the market. This brings inefficiency in the market that deviates from the basic assumption of an efficient market. The other pathbreaking research was the development of prospect theory by Daniel Kahneman and Amos Tversky in 1974. Other researchers like; Richard Thaler and De Bondt in (1985) developed overreaction hypothesis which was the violation of Bayes' rule. Events which are flooded with unexpected news and information induce an investor to overreact to those information. These researchers were the founding fathers of behavioral finance.

As per Sent (2004), the field of behavioral finance started to take a formal shape in the middle years of 1980s with the support of the Russell Sage Foundationas a sponsor to the field of research. In the late 1990's, the Roundtable Conference on behavioral economics began and that created momentum in the contributions to the field. The RAND Behavioral Finance (BeFi) Forum provides a scope for behavioral research in decision making through an annual conference and webinar series, which are held every year. Researchers have been trying to know how individuals/institutions obtain, process and assess information with the influence of biases in decision making. The internet bubble in 1999 and US subprime crisis in 2007 etc., is indicative of biases based on heuristics and deviation from optimal decisions. Thaler (1999) introduced mental accounting biases that persuade individuals and households to organize, evaluate and keep track of their financial activities. Each individual perceives information in different ways, assign various activities (food, housing, education, retirement etc.,) to specific mental accounts and evaluate their accounts narrowly and broadly. Problem of self control affects the outcome of a decision.

Statman (2008) postulated Behavioral Asset Pricing Theory (BAPT) and Behavioral Portfolio Theory (BPT) as an advancement in the field of behavioral finance. BAPT assumes that the expected return of the stock is a function of market factor, book to market factor, market cap factor, momentum, affect factor, social responsibility factor and status factor etc. BPT suggest that investors distribute their money into various mental account layers of a portfolio pyramid as per their ambition (education, savings, travelling, adventure, to be rich etc.). These goals may vary from person to person and may depend on the objective and horizon of the investment.

Barberis and Thaler (2003) presented a comprehensive view of the progress in the field and highlighted the two important phenomenon as "limits to arbitrage" and "psychology". The first aspect states that asset prices move away from the fundamental value due to the presence of traders who are not fully rational. On the other side, investors' psychology creates departure from systematic models when an individual form beliefs based on others' pereferences.Biases like; overconfidence, optimism and wishful thinking, representativeness, conservatism, anchoring, belief perseverance and availability bias affects an individual to form their belief. Figure1 presents the underpinning of Behavioral Finance (BF).

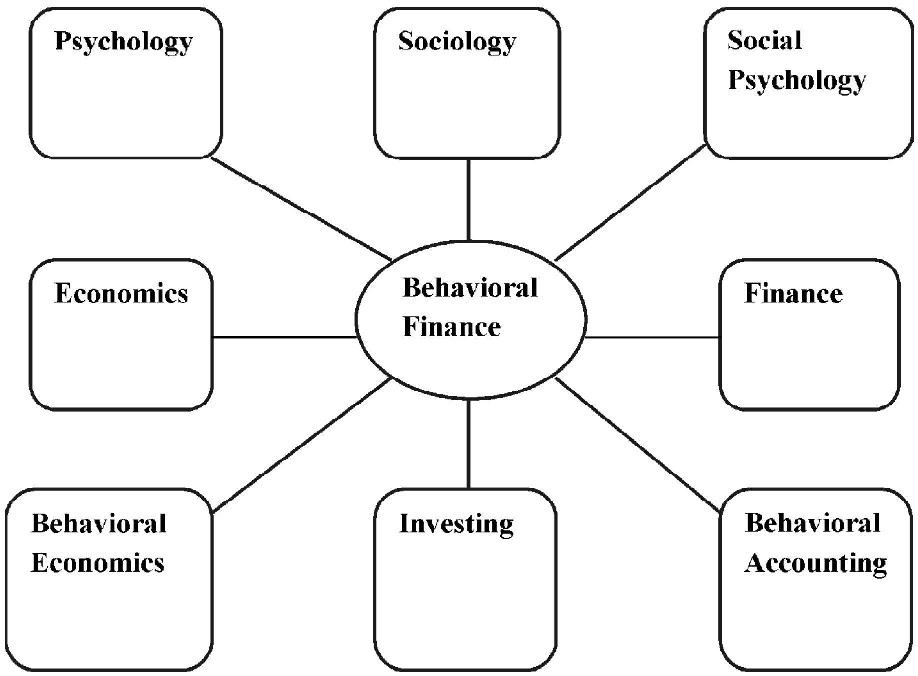

Figure 1: The Underpinning of Behavioral Finance

Source: (Ricciardi, 2005).

Figure 1 shows that behavioral finance has emerged as a concoction to the various branches of economics, psychology,accounting, finance, social psychology and investing. In the changing scenario, it is imperative to understand how does the concept of behavioral finance applies to the behavior of aggregate market as a whole. What are the developments and what future course of action would help in bringing together different aspect of decision making is the need of hour.

Documentation

The literatures have been reviewed from the year 1996 to 2015 for the present research. The primaryreason behind choosing the year 1996 as the starting year is that during these years behavioral finance started gaining its momentum. This field has evolved from many disciplines and has been applied in many contexts. Hence, for the broader understanding a thorough review of literature has been conducted using the following databases:

- EbscoHost
- Emerald
- Wiley Online Library
- SSRN
- Academy of Financial Services
- Miscellaneous Online Resources

The keywords searched were: behavioral finance, decision making, behavioral biases, investment decisions, psychology, stock markets, investors' irrationality, conventional finance, market inefficiency and asset bubbles etc. After the keyword search, around245 papers were found, out of which173 were retained for the review. Those papers which were rejected were unrelated and beyond the scope of study.

Criterion of Selection

The research papers that were selected were classified as per the following classification:

- Year of Publication
- Period of Publication
- Journal
- Nature of Study
- Type of Behavioral Biases

Classification According to Year of Publication

Figure 2 shows the increase in the number of papers from 1996 to 2000. This is because during that time bubbles in the stock market were on the rise. Then from 2001 to 2007 the trend was is on the decreasing side. From 2008 to 2011, the trend is more on the decreasing side. From 2011 to 2015, publications were on the higher side with 18 numbers. This period has seen a growing momentum in the number of publications. The decreasing number during 2001 to 2007 demanded more attention in the growing field. Hence, after this period, the field has got expansion in terms of publications. The overall graph depicts that further exploration is required in this field in terms of more number of literatures and contribution.

Classification According to the Period of Publication

The research papers have been classified according to the period of publication as showed in Figure 3. The entire time span was divided into five periods, which are;

- Period I: 1996-1999
- Period II: 2000-2003
- Period III: 2004-2007
- Period IV: 2008-2011
- Period V: 2012-2015

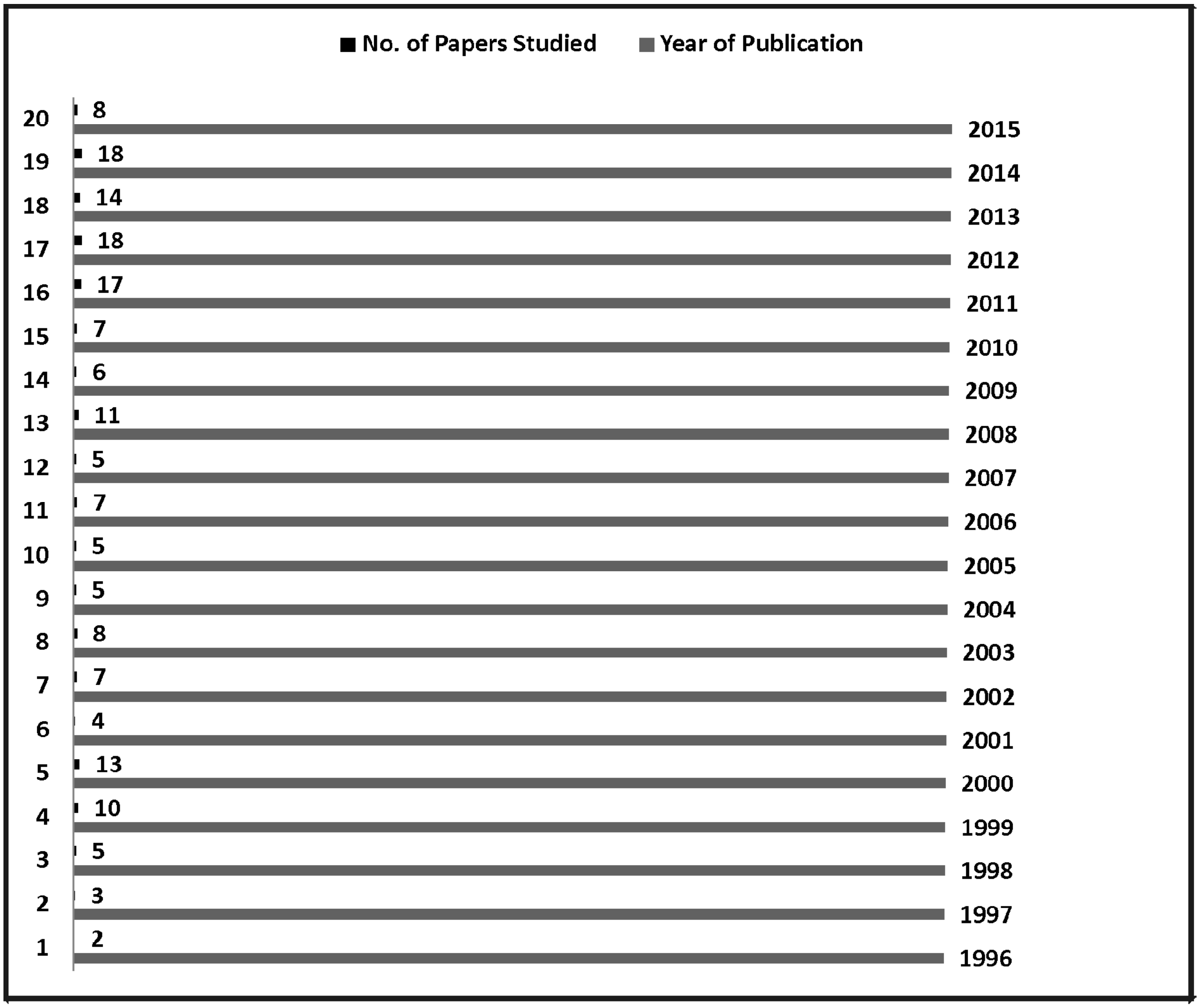

Figure 2: Year of Publication

Source: Authors' Own.

It can be inferred that approximately, 34 percent of the studies are carried out in Period V, which is the highest followed by 24 percent in Period IV, 18 percent in Period II and 12 Percent in Period I and III respectively. The trend shows that the number of publication is first increasing, then decreasing and finally move in upward shape during the last three periods. The last three period shows that the topic is taking an euphoric move in terms of more number of research and is gaining attention from different researchers, practitioners and authors.

Classification According to the Name of Journal

The distribution of 173 research papers in 105 journals is shown in Table 1. The top journals are divided into five journals such as;*The Journal of Finance, Financial Counseling and Planning, Financial Services Review, SSRN* and some of the *Websites*. These five sources have accounted for 24 percent of the contribution in terms of publication in the field of behavioral finance. The nine papers which is the highest is published in *The Journal of Finance*. This is followed by *Financial Counseling and Planning, Financial Services Review and*

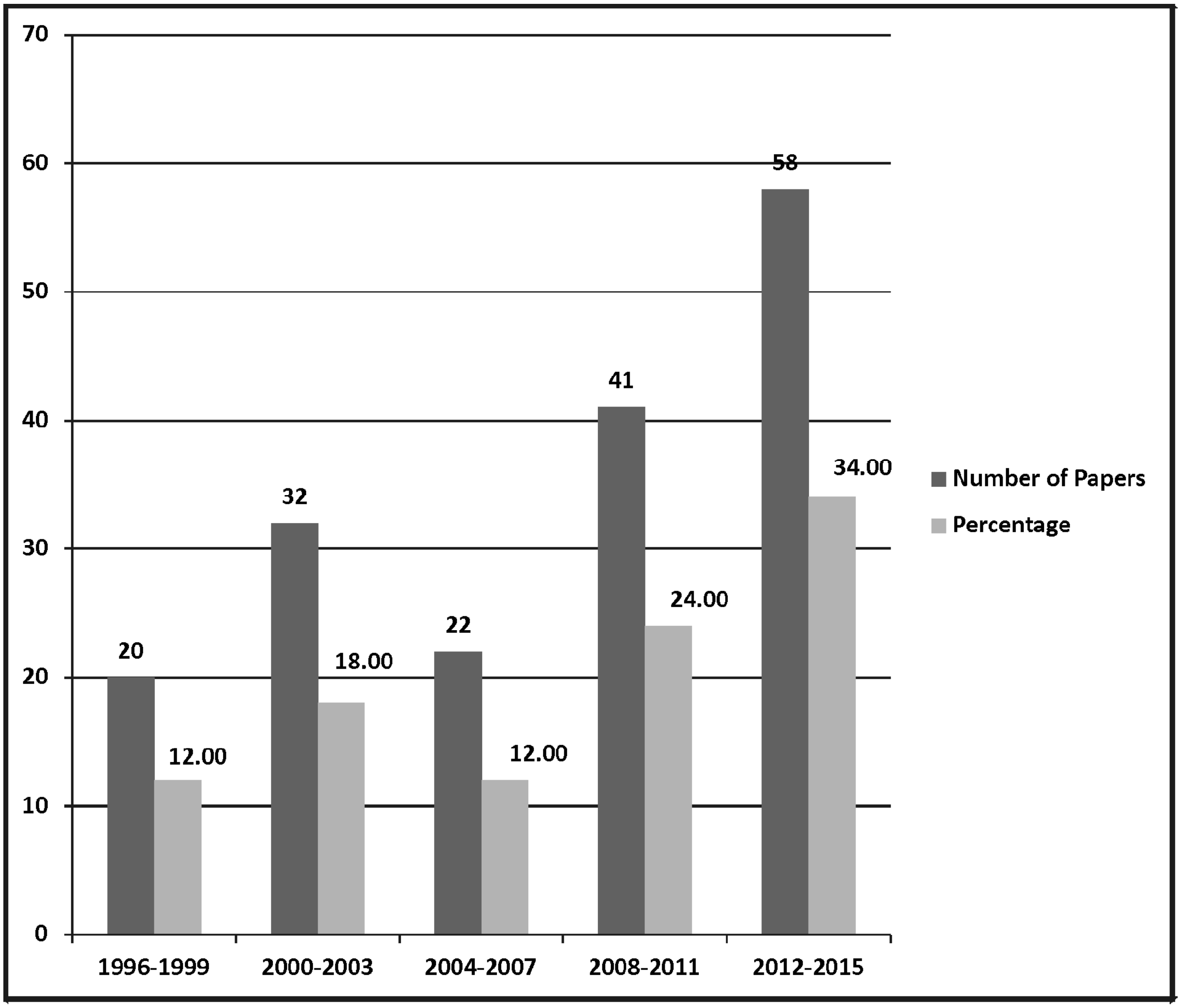

Figure 3: Period of Publication

Source: Authors' Own.

SSRN with a number of publications being six for each journals. Except thesejournals, rest all journals contribute to 71 percent of publication in the entire time span. Four theses have been referred for review, 14 website sources have also been considered for the extensive literature review. Around 81 journals have only single publications, that is one for the entire period, some of which are; Journal of Economics and Behavioral Studies, Qualitative Research in Financial Markets, South Asian Journal of Management, Journal of Financial Services Marketing, Management Insight, Proquest, Journal of Economic Behavior and Organization, Theoretical and Applied Economics and The European Financial Review etc.

It shows that there is an adequate coverage of contributions in this field. From the perspective of research a comprehensive work has been conducted during the entire time span of research.

Table 1
Journal Wise Publication

Name of the Journal	*Number of Publications*
Book	8
The Journal of Finance	9
Management Science	1
Ebscohost	1
Accounting, Organizations and Society	1
American Economic Review	1
Journal of Financial Economics	2
Sage Publications	2
Applied Economics Letters	1
The Quarterly Journal of Economics	2
Financial Analysts Journal	1
Financial Counseling and Planning	6
Journal of Pension Plan Investing	1
Financial Services Review	6
SSRN	6
IMF Staff Papers	1
RAND Journal of Economics	1
Business, Education and Technology Journal	2
University College, Dublin	1
Journal of Banking and Finance	1
Encyclopedia of Law and Economics	1
Business Economics	1
Journal of Psychology and Financial Markets	2
The Journal of General Psychology	1
Journal of Monetary Economics	1
Journal of Economic Behavior and Organization	1
Baylor University	1
The Journal of Economic Education	1
Social Science Research	1
Handbook of the Economic of Finance	1
CEPS Working Paper	1
Portfolio Positions, and Trading Activity	1
The American Economic Review	3
The Journal of Portfolio Management	1
JASSS	1
Review of Financial Studies	2

contd. table 1

Name of the Journal	*Number of Publications*
Journal of Personal Finance	1
Journal of Financial Counseling and Planning	3
The Journal of Business	2
Journal of Behavioral Finance	2
Trusts and Estates	2
Panoeconomicus	1
Jonkoping University	1
Financial Management Association Survey and Synthesis Series	1
Claremont Graduate University	1
Investment Management and Financial Innovations	1
The Geneva Risk and Insurance Review	2
Journal of Economic Perspectives	1
Journal of Behavioral Decision Making	1
Dalhousie University	1
Journal of Business and Economic Research	1
Psychological Review	1
Coventry University Business School	1
Munich Personal RePEc Archive	1
South Asian Journal of Management	1
Handbook of Finance	1
Onwallstreet	1
Journal of Economic Psychology	1
IESE Business School - Working Paper	1
Portland State University	1
Economics Bulletin	1
The IUP Journal of Behavioral Finance	4
Website	14
Qualitative Research in Financial Markets	1
TRADING	1
Journal of Financial Service Professionals	1
NBER Working Paper	2
Newspaper Article	2
Conference Paper	1
Global Business and Management Research	1
Thesis	4
African Journal of Business Management	1
Journal of Post Keynesian Economics	1
Financial Theory and Practice	1

contd. table 1

Name of the Journal	*Number of Publications*
Business Review	1
Review of Behavioural Finance	3
International Journal of Management Research and Reviews	1
Asian Academy of Management Journal of Accounting and Finance	1
Journal of Financial Services Marketing	1
Journal of Financial Planning	1
Managerial Auditing Journal	1
University of Petrosani	1
Journal of Accounting Research	1
Journal of Economics and Behavioral Studies	1
International Journal of Trade, Economics and Finance	1
Handbook of the Economics of Finance	1
Procedia - Social and Behavioral Sciences	1
Vanguard	1
International Journal of Applied and Basic Sciences	1
Finance	2
Seoul Journal of Business	1
SUMEDHA Journal of Management	1
Journal of Chemical Information and Modeling	1
IUP Journal of Applied Finance	1
The European Financial Review	1
Studies in Nonlinear Dynamics and Econometrics	1
Journal of Risk Management in Financial Institutions	1
Journal of Neuroscience, Psychology, and Economics	1
Theoretical and Applied Economics	1
Management Insight	1
Borsa Istanbul Review	1
Handbook of Statistics on Indian Securities Market	1
Proquest	1
Emerging Markets Finance and Trade	1
Revista de Gestão, Finanças E Contabilidade	1

Source: Authors' Own.

Classification According to Nature of Study

Figure 4 shows the classification of research papers on the basis of research design that is, Theoretical Approach, Empirical Model, Empirical Survey, Literature Review and Experimental design.

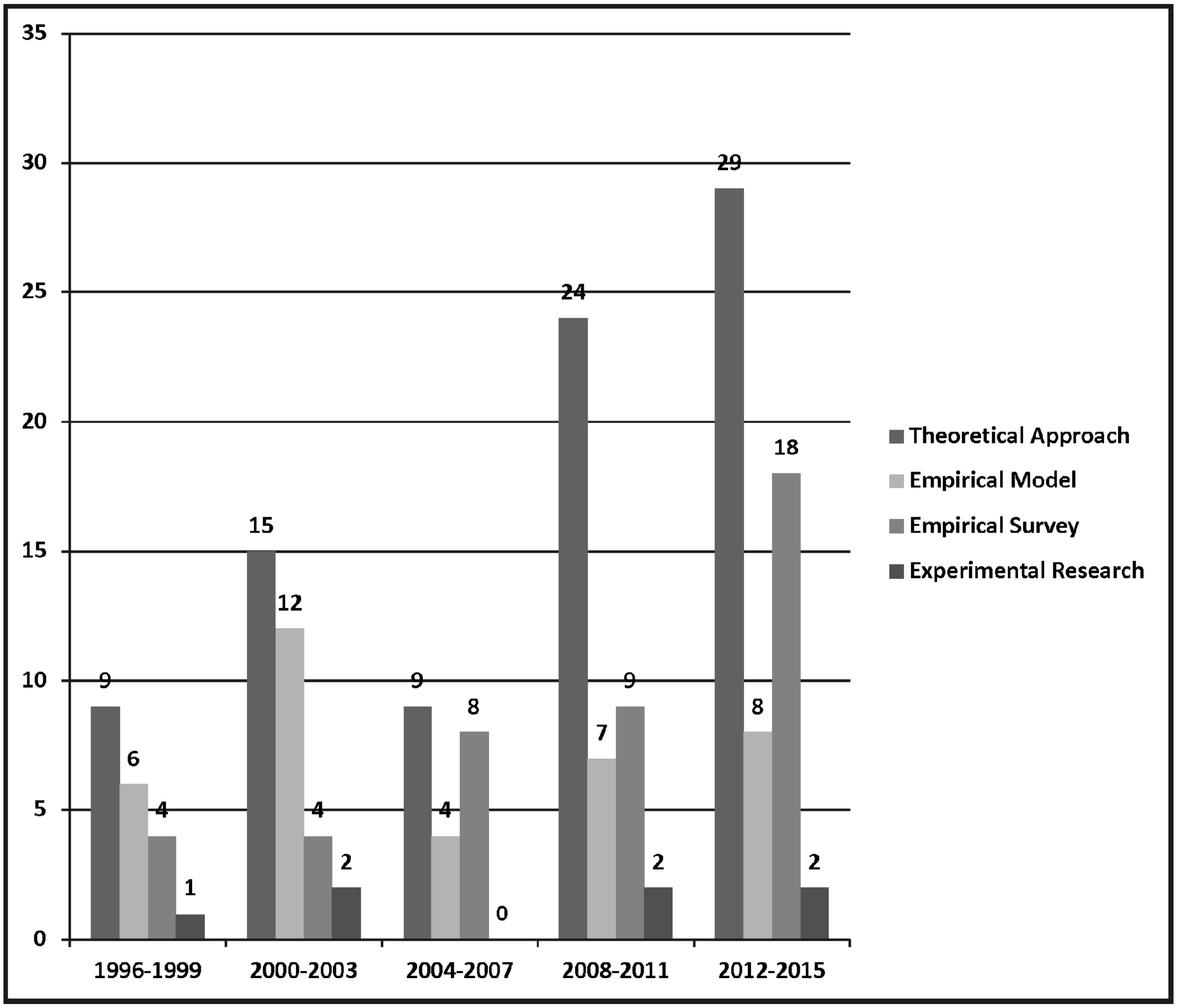

Figure 4: Nature of Study

Source: Authors' Own.

From the figure 4, it is noticed that research papers based on theoretical approach has the maximum number of publications in PeriodV, that is 29, followed by PeriodIV, Period II, Period III and Period I. For research papers based on Empirical model, publications are high in Period II, followed by PeriodV, PeriodIV, Period I,Period II and III. Empirical survey based papers have the highest publications in PeriodV, that is 18, which is followed by Period IV, Period III, Period I and II. Research papers based on Experimental Research are equal in numbers, that is 2 for the Period II, IV and V and 1 publication for the Period I.

Classification According to Type of Behavioral Biases

Table 2 shows the selection of papers out of three biases which are; overconfidence bias, herd behavior bias and risk tolerance bias. The selection of these biases for the purpose of the study is that these three biases are the most pronounced biases in terms of decision making. Therefore, the papers have also been divided as per this criterion.

Table 2
Type of Biases

Type of Biases	*Authors*
Overconfidence	(Bhandari and Deaves, 2006; Chen, Kim, Nofsinger, and Rui, 2007; Durand et al., 2013; Gervais, Heaton, and Odean, 2002; Hardies, Breesch, and Branson, 2012; Kaustiaand Perttula, 2012; Moore and Healy, 2008; Pan and Statman, 2012; Prosad, Kapoor, and Sengupta, 2013; Barber and Odean, 1999; Gervais et al., 2002; Herz, Schunk, and Zehnder, 2014; Malmendier and Tate, 2005; Schanbacher, 2014; Skala, 2008; Van de Venter and Michayluk, 2008;)
Herd Behavior Bias	(Cakan and Balagyozyan, 2014; Chang, 2014; Cipriani and Guarino, 2014; Lux, 1995; Merli and Roger, 2013; Nofsinger and Sias, 1999; Scharfstein and Stein, 1990; Steen and Gjolberg, 2013; Wang, 2008; Wylie, 2005; Yan, Zhao, and Sun, 2012; Banerjee, 1992; Bikhchandani and Sharma, 2000; Chang, Cheng, and Khorana, 2000; Cipriani, Marco and Guarino, 2014; Hong, Kubik, and Solomon, 2000; Hormats, 2004; Ionescu, 2012; Merli and Roger, 2013; Nofsinger and Sias, 1999; Wermers, 1999; Wylie, 2005)
Risk Tolerance Bias	(Wong and Carducci, 2013; Davies and Brooks, 2014; Corter and Chen, 2006; Gibson, Michayluk, and Van de Venter, 2013; Gilliam, Chatterjee, and Grable, 2010; Grable and Lytton, 2001; Grable and Joo, 2004; Grable, Lytton, and O'Neill, 2004; Guillemette, Finke, and Gilliam, 2012; Guillemette et al., 2012; Hallahan et al., 2004; ; Injodey, and Alex, 2011; Larkin, Lucey, and Mulholland, 2013; Wang and Hanna, 1997)

Source: Authors' Own

CONCLUSION

This paper takes an approach of review of literature on Behavioral Finance through an extensive search and summarizes the findings of 173 research papers published in 105 journals. It starts with the advancement in the field of behavioral finance and exchanged view about how this field has seen the progression over a number of years. The concept has evolved as a systematic departure from the rational decision making framework based on conventional finance. From the viewpoint of bounded rationality to the presence of behavioral biases in many facets of decision making, this field has undergone developments in terms of contributions from many researchers and practitioners. This paper involves classification of research papers based on various criteria such as; year of publication , period of publication, journal, nature of study and type of behavioral biases. Built on the discussion in the paper, the following conclusions have been drawn and future course of action is proposed.

The trend in the field of behavioral finance shows that it has been on a developing track. Earlier, most of the studies were done on the deviation from the conventional field of finance, where researchers have disproved the theories like; efficient market theory, mean-variance theory, capital asset pricing model etc., which assumes markets are efficient and people are rational in nature. Then, with the development of theories in the field of behavioral finance, academicians have proved that those theories like; prospect theory, behavioral portfolio theory and behavioral asset pricing theory support the irrational thinking of investors in their decision making framework.

Later on, the presence of an asset bubble and market crash is indicative of the dimensions of biases such as: Herding, Overconfidence, Anchoring, Representative bias etc. in the domain of investment. Taking this into account, more survey based researches are taking place along with theoretical research in the fifth period of research. The growing trend depicts that research based on the behavioral biases has been on the rise. The presence of overconfidence bias, herd behavior bias and risk tolerance bias has been highlighted through the literature, which shows that how an individual gets affected by these biases while taking investment decisions. The latest research works are more towards this phenomenon as the trend is more towards theoretical based research. Hence, more focus needs to be given to empirical papers in this field. So, there is a requirement to support the concepts based on empirical research. More and more tools and techniques used in research may unravel untapped dimensions of research.

Future Course of Action

The discussion based on the different classification; nature of study and period of publication reveals that researchers are more inclined towards this field and a number of publication are increasing towards the latest years of research. This shows that there is a growing demand formore number of research for the overall development of the field. Therefore, the following points have been mentioned based on the review to take a future course of action:

- Most of the studies have been carried out on a theoretical approach. To validate those theories, more empirical papers should be contributed by researchers as the field is open for research (Forrester, 2014; Gholizadeh, Shakerinia, and Saber, 2013; Pompian and Longo, 2004; Thi and Ngoc, 2014).
- A large number of studies have been conducted in UK and US and few studies are in Asian countries context. The research can be applied in other countries and India as well as there is a scanty research in India. Hence, further research can be carried out in the Indian context.
- Many studies have documented numerous biases. This review focuses on overconfidence bias, herd behavior bias and risk tolerance bias. A comparative study could be drawn between the biases to check which is the most pronounced bias among the investors. Even a comparative study could also be conducted between countries to check whether investors suffer from the similar biases.
- It is found that there is a need to assess the debiasing strategy that companies take so that their customer does not fall prey to irrational behavior. It is also suggested that these strategies should cater to different segments of the capital market as per the requirement of the customers.
- Several researches are based on different models (Chang *et al.,* 2000; Caporale *et al.,* 2009) for measuring bias. The validation of those models could be tested empirically and in a different context.
- It is admitted that studies are predominantly based on investors decision. Further studies could be done on other stakeholders of financial markets such as; exchange, analyst, intermediary, media, employees, managers, non managers and policy makers etc. This would open up a new scope for the overall financial industry.

It can be stated that there is a scope for further research in the field of behavioral finance and the sector is widely open for researchers and academicians. Enhancement of techniques for measuring behavioral biases can be used and applied in different state of affairs.Therefore, proper approach should be used to augment other issues of behavioral finance beyond the scope of present study.

Limitations

Although an extensive literature review has been conducted for this research based on some keywords, but there might be some of the pertinent studies which have been missed out. Due to which this study might have not included some very crucial aspect of decision making. Despite the limitations, a genuine endeavour has been made to present a comprehensive research based on few factors. Finally, suggestions have been given based on the findings to open up new avenues of research. There is an immense opportunity for researchers to contribute towards the field of behavioral finance.

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