

BEHAVIOR OF FINANCIAL MARKETS AROUND NEWS ANNOUNCEMENTS: A REVIEW BASED ON BIBLIOMETRIC ANALYSIS OF SCIENTIFIC FIELDS

NEENU C AND T MOHAMED NISHAD

ABSTRACT. This study analyses existing literature about investor behavior around news announcements. We use bibliometric analysis to explore the evolution and development in this theme. We analyze 815 research articles collected from Scopus database from 1992 to 2021 through bibliometric measurements and social networks using Vosviewer. We find that the number of studies examining investor behavior in response to news announcements has been steadily increasing over time, particularly since 2008. Further, the study highlighted influential authors, countries, institutions, impactful journals, and top articles in this theme. To identify the research gap to propose agenda for future research, the study conducted clustering and factor analysis of main studies and themes in this literature. Majority of the studies has focused on the impact of news announcements on stock market and individual investor sentiment, particularly herd behavior of investors. Even though many researchers tried to investigate different aspects of investor behavior around corporate and macroeconomic news announcements, to the best of our knowledge, no studies have been conducted to evaluate the performance and trends in this theme. This study significantly contributes to the financial literature dedicated to news announcements by analyzing the trend and pattern of publication in this theme and helping researchers and other participants in the financial market to get insight in this theme and to conduct future studies.

1. INTRODUCTION

The investigation of whether the characteristics of corporate and macroeconomic news announcements influence investor decision-making is a new and exciting field of research for academics. Investors' attention to various events, including corporate events such as earnings announcements, merger announcements, dividend announcements, and stock recommendations, has been studied recently. (Azuma et al., 2014), (Cheng et al., 2015), (Park et al., 2014), (Boussaidi, 2013), (Yang et al., 2017), (Docking & Koch, 2005), (Vieru et al., 2006). Investors may overreact or underreact to news/information; for example, they may appear to overreact to corporate events such as a seasoned equity offering, while appearing to underreact to an event such as a share repurchase (Kadiyala & Raju 2004, 359-362). Similarly, they overreact to private information because they are more confident in it, and they underreact to public information because they are less confident in it (Zhang et al., 2006,108-15). This over- and underreaction implies that, on average, investors react to information biasedly. The information content of announcements varies depending on the type of investor (Vieru et al., 2006, 146-49). Institutional investors are better informed than individual investors because they have lower

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Neenu C, PhD Candidate, Research Scholar, Research Department of Commerce and Management Studies, Farook College (Autonomous) Kozhikode. E-mail: neemuc030595@gmail.com.

T Mohamed Nishad, PhD, Associate Professor, Research Department of Commerce and Management Studies, Farook College (Autonomous) Kozhikode. E-mail: nishad@farookcollege.ac.in.

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marginal costs for gathering information. Similarly, the timing of information arrival influences its impact on the market; for example, firm-specific information (such as a dividend change announcement) received during a market environment of high uncertainty can be interpreted differently than if it is received during a market environment of low uncertainty. When the news is good or positive, the stock price continues to rise after the initial positive reaction; when the news is bad or negative, the stock price continues to fall after the initial negative reaction (Feng & Hu, 2014, 289-304). In conclusion, the market's initial reaction to new public information is incomplete, as good news predicts relatively higher future returns while bad news predicts relatively lower future returns (Zhang et al., 2006, 108-110).

Because investors have limited time and cognitive resources to process information, investor attention plays a significant role in determining asset or security prices. Until investors pay attention to important news and information, stock prices do not fully reflect it (Cheng et al., 2015, 269-271). When they are confronted with a large amount of information at the same time, how they allocate their limited attention becomes a critical issue. Investors' limited information processing capacity causes them to become distracted, resulting in a significant reduction in immediate market reaction (Feng & Hu, 2014, 291-93). Price reactions reflect the average investor reaction to a news announcement rather than the actions of individual decision-makers; however, a small price reaction does not imply that news announcements are a minor source of information to the market (Barron, Schneible, Jr, & Stevens, 2018, 1652-55), and market adjustments to information disclosures are dependent on their precision; new information is precise to the extent that it reduces uncertainty (Pincus, 1983, 158-164). Similarly, for low-uncertainty stocks, market reaction to new information is relatively complete, and there is little news-based return predictability (Zhang et al., 2006, 109-111).

In an efficient market, the stock price reflects all available data (Azuma et al., 2014, 30). Rather than reacting quickly to unexpected news, the stock price tends to drift in the same direction as the surprise over time. Some models are based on less rational or irrational market actors, in addition to rational information usage settings (Vieru et al., 2006, 147-48). It assumes that people are influenced by emotions and other subjective variables, rather than acting rationally as predicted by Expected Utility Theory (Costa, Carvalho, Moreira, & Prado, 2017, 1777-79). The impact of these subjective variables can cause errors in information processing due to stereotyped judgement, which can lead to poor decision-making and a drop in stock price. Similarly, "frame dependence" affects investors' perceptions of information processing, implying that how decision problems are framed influences investors' perceptions of risk and return (Docking & Koch, 2005, 23-25). In their Prospect theory, (Kahneman & Tversky, 1979) also justify it. Due to the anchoring/conservatism bias, investors who are biased/ less rational overweight their priors relative to new information, and they overweight their priors even more when there is greater information uncertainty (Zhang et al., 2006, 109-110). The study of investor behaviour is important in finance literature, but it is also very complicated. Despite the fact that many researchers have attempted to capture various aspects of investor behaviour around information arrival (Daniel K. H. D., 2002), (Barron, Schneible, Jr, & Stevens, 2018), (Hirshleifer D. H. T., 2003), (Kaniel, Liu, Saar, & Titman, 2012), no one has attempted to evaluate the performance and gap that exists in this field.

To summaries and systematically comprehend the vast literature on financial market and investor sentiment/behaviour in response to news announcements, we conducted a bibliometric analysis. This research will add to the finance literature in a number of ways. It will first aid in determining the pattern and growth of literature on market sentiment over time, and second, it will shed light on future research opportunities in this area by highlighting the thematic cluster of works which has been focused by authors. This objective of the study is twofold, firstly to narrate the publication trend and citation pattern of literature on investor behaviour and secondly to examine the thematic clusters in this theme and to propose scope for future research which will aid researchers to understand the intellectual structure of investor behaviour around news announcements and to focus on the unexplored area of the same and it will assist

academicians to contribute significantly to this field of research. This literature can also assist academics, money managers, and investors in comprehending the background and growth in this area.

2. THEORETICAL BACKGROUND OF THE STUDY

Many academicians, professional money managers, and other rational people have spent their time learning more about investing psychology because psychologists have accumulated evidence that "economic man — is very unlike a real man" for at least 40 years. As a result, many academicians, professional money managers, and other rational people have spent their time learning more about investing psychology. Investment managers are interested in it because they need to develop strategies based on how markets operate, academicians are interested in it (Hirshleifer 2001a) because they want to develop new theories and concepts about it, and the general public wants to understand what they do and how emotions affect their investments. The relationship between investor behavior/ sentiment and market reaction has long been a topic of research in the fields of empirical and behavioural finance.

The Efficient Market Hypothesis (EMH) proposed by Fama (1976), which states that financial markets are information efficient. Furthermore, in an efficient financial market, the prices of traded assets reflect all available information about market fundamentals, according to the Capital Asset Pricing Model (CAPM) (Naik and Padhi 2016). However, in a world of asymmetric information, better informed insiders use the information as a costly signal, while noise traders act irrationally on noise because they lack access to inside information. The 'noise traders' theory, as it is known in the literature, states that asset prices will deviate from their intrinsic value if some investors trade on noisy signals unrelated to fundamentals. As a result, investor sentiment should influence both stock returns and market volatility. They are more likely to buy in bull markets and sell in bear markets because their sentiments can induce systematic risk and affect asset price in equilibrium, and it describes the market (de Bondt 1998). Traders who trade based on noise or sentiment, on the other hand, can contribute to market anomalies. In contrast to traditional finance theories, recent behavioural finance research demonstrates that market participants' sentiment and trading behaviour can have a significant impact on asset returns in real-world financial markets (Fisher and Statman 2000). Investor sentiment refers to an investor's personal beliefs about future cash flows and risk associated with their investment, which may or may not be backed up by facts. Rather, investor sentiment is largely influenced by their own interpretations of recently released news and/or events (Sun, Bao, and Lu 2021). Several studies have been conducted on various aspects of investor sentiment and behaviour, as well as their impact on market returns. Akhtar et al. (2011) proposes a simple model of investor sentiment that explains how investors form their viewpoints. In controlled settings, the model also matches experimental evidence on individual judgement failures under uncertainty and investor trading patterns. Tversky and Kahneman's (1974) findings on the important behavioural heuristic known as representativeness, or experimental subjects' tendency to view events as typical or representative of a specific class while ignoring probability laws, are particularly consistent with their definition.

Understanding what sentiment is, deciding on an appropriate sentiment measure, and quantifying sentiment's impact on asset prices are all crucial (Smales 2017). Much of the relevant literature has focused on the empirical relationship between market returns and investor sentiment at the aggregate level. In an attempt to capture this relationship, a variety of proxies have been used. Direct measures based on investor surveys are one type, while indirect measures based on economic or market variables are another. Two popular survey-based sentiment measures on the market are the ING Investor Dashboard sentiment index and the Investors Intelligence sentiment index. The investors' intelligence sentiment survey, which is similar in nature to consumer confidence by Qiu and Welch (2004), is able to reflect investors' confidence and has been widely used as a proxy for investor sentiment in the existing literature. Brown and Cliff (2004) used several direct and indirect measures of sentiment, Smales (2017) introduced

five different measures of investor sentiment; CBOE implied volatility index (VIX), composite index of (Baker and Wurgler 2006), The University of Michigan Consumer Sentiment Index, measure of sentiment is provided by the American Association of Individual Investors (AAII), and sentiment proxy computed using the weekly COT report issued by the Commodity Futures Trading Commission (CFTC). (Huang et al. 2015) proposed a new investor sentiment index that is aligned with the purpose of predicting the aggregate stock market, Bandopadhyaya and Jones (2006) developed an Equity Market Sentiment Index. Chen, Chong, and She (2014) constructed a principal component-based composite sentiment index.

The type of information/news and type of asset that investors hold have a significant impact on investor behaviour and trading decisions. Consider a group of investors who can shift their holdings in financial markets between risky investments (stocks) and relatively safe investments (bonds) (bonds). Assume that investors' default position is to consider all information to be reliable. As a result, if the information lacks any of the characteristics of bad information, the investor's portfolio remains relatively unchanged. If the information is bad, it is dealt with quickly. Investors quickly reject the ("good news") assumption in this case and rebalance their portfolio away from risky stocks and toward safe bonds (Akhtar et al. 2011). Good/positive news causes less volatility than bad/negative news of the same magnitude, which is known as the leverage effect (Black 1976). Panic selling and overreaction can both contribute to this. Positive and negative sentiment announcements do not have the same impact on stock prices, according to (Akhtar et al. 2011). They also consider whether the psychological bias of "negativity" influences sentiment announcements. Because of the negativity effect, negative information has a higher value than positive information. There is a wealth of literature on asymmetric security market reactions to various types of news announcements, including (Busse and Clifton Green 2002), (Chan 2003), (C. W. S. Chen, Chiang, and So 2003), and (Kurov 2010). (Yang and Li 2013).

Following Baker and Wurgler (2006), investor behaviour/ sentiment, particularly around news announcements, has captured a significant and interesting field of research since 2021 in the COVID-19 scenario. The announcement of disease-related news has been documented as one of the critical factors that shape investor sentiment among determinants of investor sentiment (Sun, Bao, and Lu 2021). He looked into whether Coronavirus-related news (CRNs) and economic-related announcements (ERAs) are priced into medical stock portfolios in China, Hong Kong, Korea, Japan, and the United States. Anastasiou, Ballis, and Drakos (2022) investigated the extent of market responses and the scope of investor sentiment during the COVID-19 pandemic across G20 markets by creating a new positive search volume index for COVID-19. Moreover, Dash and Maitra 2022 captured pandemic uncertainty and examined its effect on stock market activity (return, volatility, and illiquidity) of major world economies using daily data from the Google search engine volume index (GSVI). By using COVID-19 as a crisis period, Maghyereh and Abdoh (2022) contributed to the literature by attempting to answer two questions: how does investor behaviour affect market volatility during crises, and whether investor sentiment can be used to forecast volatility during crises. It is clear that academics are continuing to find investor behaviour and sentiment to be an interesting field of study. Thus, this study attempts to comprehend the literature of market behaviour around news announcements to explore the development, pattern and trend in this literature and to explore the major research themes to identify research gap existing in this area and to propose future research recommendations.

The remaining part of this work is structured as follows, in the next section the methodology and the process used in this study will be presented. The third section presents the results obtained relating to performance and productivity, as well as the analysis of scientific maps. The last section concludes the work by pointing the gap in the existing literature and future scope.

3. DATA AND METHODOLOGY

The present is characterized as a bibliometric analysis based on research articles indexed in Scopus database. We elect to acquire data from Scopus, as this is the database that offers the widest coverage of peer-reviewed research in finance (Goodell, Kumar, Lim, & Pattnaik, 2021, 7-10). Bibliometric analysis is defined as a part of scientometric, which uses mathematical and statistical methods to analyse scientific activities in a research field (Barron, Schneible, Jr, & Stevens, 2018, 1660-65). It allows the possibility to unveil significant aspects, such as the citation, co-citation, co-authorship and co-occurrence analysis (Yohn & Lombardi, 1998, 170-74). It is a robust and relevant instrument to assess scientific production through quantitative techniques such as citations, co-citation, co-occurrence of keywords and bibliographic coupling. Further, it provides graphical mapping based bibliographic coupling analysis. Bibliometric studies have proven useful in helping researchers better explore the current research trends within a particular field of study (Vamosy, 2021).

3.1. Search Procedure and Data Collection. The following meshes concerning the delimited theoretical field were defined in order to go on with the bibliometric analysis: “news announcements”, “investor behavior”, and “behavioral bias”. The terms “stock market”, “financial market” was defined as additional terms related to the research field.

The Boolean operators “AND” and “OR” were used to conduct the search. The “AND” operator is used to related the terms applied for the field and terms related to the field, whereas, the “OR” operator was applied between the terms defined for the theoretical field and the related terms. The search in the Scopus database were as follows: “news announcements” AND “investor behavior” OR “behavioral bias” OR “investor sentiment” AND “stock market” OR “financial market”, which resulted in an initial data set comprising 909 documents.

Besides, four search filters were defined, namely: (1) the search limited to articles and conference papers, only: (2) the search limited to final documents: (3) the search limited to those concerning in the research filed of “Business, Management and Accounting”, “Economics, econometric, finance” and “Social science”: (4) the search will be conducted in English language only, which returned to the final set of 815 documents.

3.2. Tools for analysis. To provide quantitative statistics and a comprehensive review of the key influential and intellectual structure of research work in this field of research, we use a range of bibliometric analysis techniques. The data is analysed using bibliometric analyses such as citation, co-citation, and co-occurrence. On this topic, citation analysis is used to uncover the current trend, influential and impactful authors, productive countries, and institutions. For the documentation of fundamental knowledge on this topic, co-citation analysis is effective (Goodell, Kumar, Lim, & Pattnaik, 2021, 7-10). Topical dynamics can be revealed using co-occurrence or co-word analysis.

4. RESULTS AND DISCUSSION

4.1. Performance analysis of research in news announcements and market behavior.

4.1.1. Contextual analysis of the scientific production in the sample. The publication trend of research work in the theme of news announcements and market behavior in the stock market presented in Figure 1, wherein the total number of publications on this area is mapped against their respective year of publication from 1992 to 2021. By analyzing the figure, it is found that the research in this field is not new, occurring since 1992. During the initial year 1992, two main papers were published on this theme by (Abarbanell and Bernard 1992) and (Ball 1992) in the topics of “Tests of Analysts’ Overreaction/Underreaction to Earnings Information as an Explanation for Anomalous Stock Price Behavior”, and “The earnings-price anomaly”. The first paper is aimed at measuring whether security analysts underreact or overreact to prior earnings information, and whether any such behavior could explain previously documented anomalous stock price movements. The second study explores systematic explanations for the anomalous

evidence in the relation between accounting earnings and stock prices. Thus, by analyzing Fig.1, it was possible to observe an increase in the number of publications throughout the years, mainly from 2008 on. After the financial crisis of 2008, the investor sentiment during news announcements catches the attention of the world of researchers; most likely because increased arrival of information and risk in decision making. Moreover, during the period 2009 and 2010, there are 23 publications were taking place on this theme. An ultimate lift in the number of publications to 51, in 2014. In the last 4 years, from 2018 to 2021, the number of publications crosses the limit of 60 and reaches almost 150.

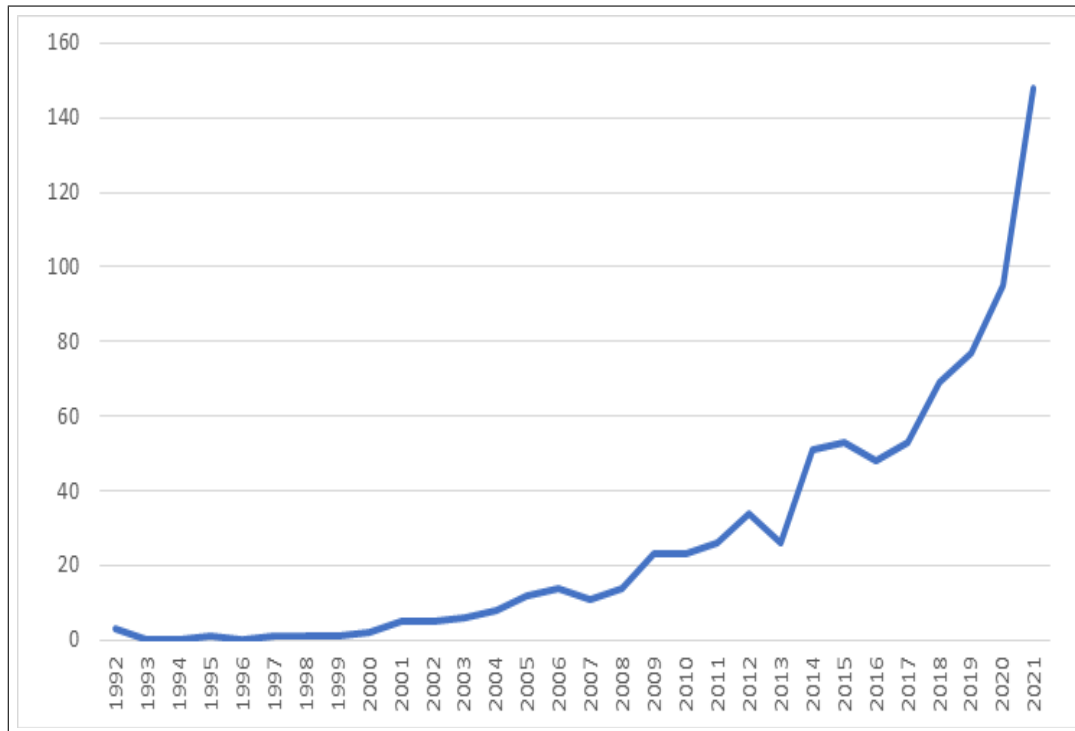


Figure 1: Publication trend of research in news announcements and investor behavior/sentiment in the stock market.

4.1.2. *Prolific authors.* The most influential authors in the field of research are ranked in terms of total citations received (Table 1) along with name of the paper, year of publication and name of the journal. The author who receives most citation is (Blanchard et al., 1998) (2115) for the paper “A model of investor sentiment “which was published in the year 1998 in Journal of Financial Economics. The author who ranked second is (French and Roll 1986) who received 988 citations for the paper “Stock return variances. The arrival of information and the reaction of traders”, followed by (Vermaelen, n.d.) (564) and (Engelberg et al. 2011) (406) for the paper titled “Common stock repurchases and market signalling. An empirical study” and “The Causal Impact of Media in Financial Markets” respectively.

4.1.3. *Critical evaluation of key publications of prolific authors.* The most influential author in this field of research is (Blanchard et al., 1998) with 2115 citation for their paper on “A model of investor sentiment”. In this paper they tried to develop a parsimonious framework of investor sentiment. The framework is based on the empirical evidence of investors underreaction to earning announcements news and their overreaction to bad and good news and this model is based on one investor and one asset. This work argues that the somewhat unpredictable nature of investor sentiment is a major factor for limited arbitrage. This paper makes plausible and scientifically defensible assumptions regarding the intensity and importance of various events on investor sentiment. Even though it is crucial to create a methodology for categorizing

events according to their size and magnitude before making further assumptions about investor sentiment from this categorization. In the paper titled “Stock return variances. The arrival of information and the reaction of traders” by (French and Roll 1986) received 988 citations. In this paper, they focused on the phenomenon of increased volatility of stock price during trading hours than non-trading hours due to public information, private information and pricing errors. They proposed that private information causes more stock price fluctuation than other two during trading days. The above-mentioned issue is not considered in this paper also. For evaluating among private information those private information causes more volatility to stock prices, an authenticated way of classification of private information should be undertaken. Similarly, (Vermaelen, (1981) looked into share price behaviour during repurchase announcements of firms, that is the signalling theory. Their findings are in line with two prior findings: there is a market where securities are priced by investors in a way that prevents projected arbitrage profits, and corporations offer premiums for their own shares primarily as a signal of good news. Further, (Engelberg et al. 2011) investigated the impact of media report on financial market. Particularly, they compared the behaviour of investors with regards to same event or information with access to different media coverage. The study discover that the likelihood and scale of investors’ local trading are substantially correlated with the existence or absence of local media coverage. Additionally, they discovered that the stories that local newspapers reported to attract the investing preferences of local readers had no influence on their trading behaviour. In this paper the authors limited the scope by focusing in to events by different medias coverages. The effect of earnings announcement on investor’s trading behavior is further investigated by (Atiase et al. 1994). They find that, the magnitude of information asymmetry and price reaction are having significant impact on trading behavior. In general, the size of returns is typically positively correlated with trading volume. The findings of this study extend this earlier discovery to a time frame of accounting earnings announcement periods. All these impactful authors were focused on stock price reactions to news announcements.

The relation between investor behaviour and market announcements were investigated by (Kaniel et al. 2012), (Galariotis, Rong, and Spyrou 2015), (Arif and Lee 2014) and (Nofsinger, n.d.). The paper titled “Individual Investor Trading and Return Patterns around Earnings Announcements” by (Kaniel et al. 2012) demonstrates evidence of informed trading practices of individual investors around earnings announcements using data of NYSE companies. Their result indicates that large aggregate purchase of shares by individual investors indicate large positive abnormal return around earnings announcements and vice versa. Additionally, they suggested that after earnings announcements, traders engage in both return- and news-contrarian strategies. Herding behaviour of investors in USA and UK towards fundamental macro-economic news announcements were investigated by (Galariotis, Rong, and Spyrou 2015). The study found that the US investors are tend to herd around macro-economic news announcements. Even though the herding characteristics of investors of these two markets were significantly different, there is herding spill over from US to UK market. Their result suggests that the herding on news announcements is country specific. (Nofsinger, n.d.) studied the relationship between total investment, expected equity returns, and investor mood using financial data of corporates. Corporate investments reach their maximum at periods of positive sentiment and which followed by low stock returns and they conclude that the simplest way to gauge investor sentiment in the market is to look at the corporate investment.

Interest in information asymmetries and investor behaviour in stock markets has recently increased. Various behavioural finance models have proposed that investor response depends on the persistence of a string of comparable earnings shocks. These models are based on psychology literature that implies individuals are susceptible to cognitive and motivational errors. Studies examining how to forecast investor preferences based on the events/news affecting their behaviour are rare.

Table 1: Influential Authors

Sl.No	Author	TP	TC	Title of the paper	Year	Journal
1	(Blanchard et al., 1991)	1	2115	A model of investor sentiment	1991	Journal of Financial Economics
2	(French and Roll 1986)	1	988	Stock return variances. The arrival of information and the reaction of traders	1986	Journal of Financial Economics
3	(Vermaelen, 1981)	1	564	Common stock repurchases and market signalling. An empirical study	1981	Journal of Financial Economics
4	(Engelberg et al. 2011)	1	406	The Causal Impact of Media in Financial Markets	2011	Journal of Finance
5	(Atiase et al. 1994)	1	163	Trading volume reactions to annual accounting earnings announcements. The incremental role of predis-closure information asymmetry	1994	Journal of Accounting and Economics
6	(Kaniel et al. 2012)	1	151	Individual Investor Trading and Return Patterns around Earnings Announcements	2012	Journal of Finance
7	(Yuan, Zheng, and Zhu 2006)	1	140	Are investors moonstruck? Lunar phases and stock returns	2006	Journal of Empirical Finance
8	(Rosen 2006)	1	124	Merger momentum and investor sentiment: The stock market reaction to merger announcements	2006	Journal of Business
9	(Galariotis, Rong, and Spyrou 2015)	1	114	Herding on fundamental information: A comparative study	2015	Journal of Banking and Finance
10	(Hotchkiss and Strickland, 2003)	1	98	Does Shareholder Composition Matter? Evidence from the Market Reaction to Corporate Earnings Announcements	2003	Journal of Finance

11	(Jung et al. 2018)	1	93	Do firms strategically disseminate? evidence from corporate use of social media	2018	Accounting Review
12	(Chan et al. 2010)	1	85	Share repurchases as a potential tool to mislead investors	2010	Journal of Corporate Finance
13	(Pritamani and Singal, 2001)	1	84	Return predictability following large price changes and information releases	2001	Journal of Banking and Finance
14	(Arif and Lee 2014)	1	78	Aggregate investment and investor sentiment	2014	Review of Financial Studies
15	(Nofsinger, 2001)	1	78	The impact of public information on investors	2001	Journal of Banking and Finance
Source: Elaborated by the authors and based on data by Scopus						
Note: TP= Total Publication, TC= Total Citation.						

This gap is most likely caused by the fact that researchers do not have access to the enormous quantities of highly confidential financial transaction data needed to make such inferences from analysing actual behaviour. Moreover, most of studies in this literature has either focused on examining market reaction, particularly stock market reaction to news announcements or investor sentiment or attitude towards the same. Studies focusing on investor behaviour/ sentiment for a particular event (dividend announcements, bonus issue etc..) or a category of events (private announcements, macro-economic announcements, industry and firm specific announcements) are very few. Additionally, very few researches have been focused on the influence of news announcements on investor bias, and studies address this issue are mainly focusing on herd behaviour. In order to gain a deep understanding of literature on investor behaviour around news announcements and to propose future scope by addressing the gap existing in this field, we conducted a bibliometric analysis.

4.1.4. *Countries and Institutions analysis.* Figure 2 shows the importance of the United States of America in terms of scientific production, based on the countries of origin of the first authors; it is the most productive country in this topic, with 380 publications and 28453 citations. With 80 publications and 1568 citations, the United Kingdom is second only to the United States. France, China, and Hong Kong have a total of 1135, 1090, and 1083 citations, respectively. With 29 publications and 510 citations, India also makes a significant contribution to this topic.

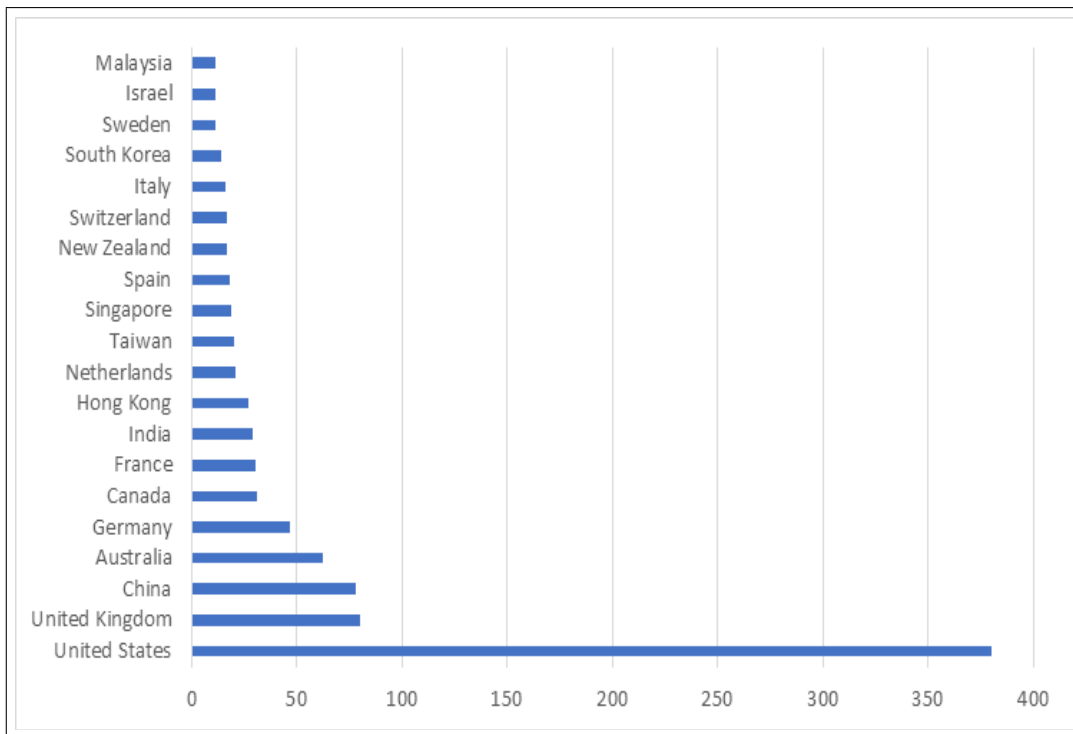


Figure 2: Productive countries. *Source: Elaborated by the authors and based on data by Scopus*

By examining institutions' contributions to this topic (Table 2). With 1004 citations on this topic, the University of California in the United States is the most productive university. The National Bureau of Economic Research in Cambridge, Massachusetts, came in second with 993 citations. With a total of three publications, Texas A&M University, University of Notre Dame, University of Miami, and Michigan State University each have 601, 454, 400, and 321 citations, respectively. Nanyang Technological University in Singapore took first place in terms of publications, with a total of six. Erasmus University Rotterdam, the Netherlands, came in second with five publications.

Institution	TP	TC
University of California, United States	3	1004
National Bureau of Economic Research, Cambridge, United States	3	993
Texas A and M University, United States	5	601
University of Notre Dame, United States	3	454
University of Miami, United States	3	400
Michigan State University, United States	3	321
National Bureau of Economic Research, United States	4	272
University of Illinois, United States	3	248
Harvard Business School, United States	3	232
Nanyang Technological University, Singapore	6	150
University of Washington, United States	3	144
University of Georgia, United States	3	117
University of Southern California, United States	3	106
Erasmus University Rotterdam, Netherlands	5	93
Stanford University, United States	4	91
Yale School of Management, United States	3	91
Rutgers University, United States	3	77
Source: Elaborated by the authors and based on data by Scopus.		
Note: TP= Total Publication, TC= Total Citation.		

4.1.5. *Impactful Journals.* In order to finalize the most important research articles in this theme, the journals with the most citation, publication and cite score were also examined. The top 20 journals with the highest citation are shown in Figure 3.

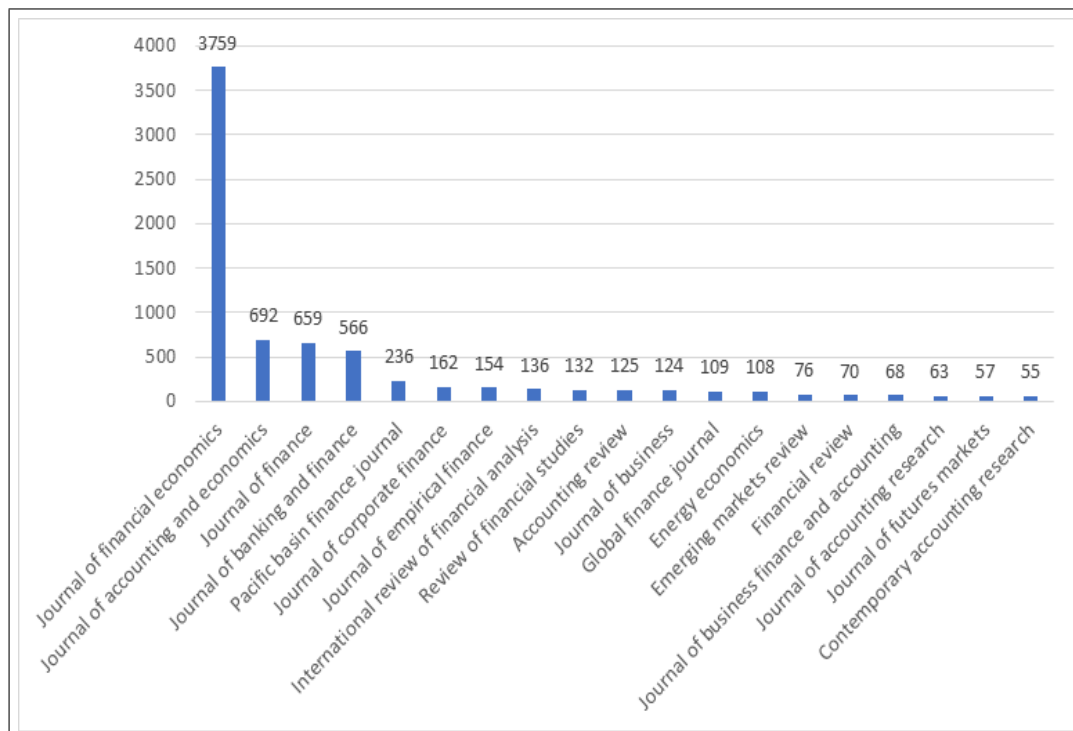


Figure 3: Journals with more citation Source: Elaborated by the authors and based on data by Scopus

The Journal of financial economics having highest citation (3759) for articles published during this period, followed by the Journal of Accounting and Economics with a total of 692 citation.

Journal of Finance and Journal of Banking and Finance is ranked in the third and fourth places with a total citation of 659 and 566 respectively. Further analysis of total publication and cite score per year for the latest 10-year period (2011-2021) were presented in table 3 and 4 respectively. By evaluating total number of publications, in 2011, Applied Economics Letters having highest number of publication (320) followed by Journal of Banking and Finance (264). Both of these journals consistently contributing to this literature by publishing large number of articles during this 10-year period. Finance Research Letters having least number of publications (26) in the year 2011. But their contribution has significantly increased by year and reached second top (411) in the year 2021. In the year 2021, with 475 publications, Applied Economics Letters being in the first position. In the evaluation of cite score of journals for the last 10- year period, the Journal of Accounting and Economics having highest cite score (6.5) in 2011, followed by Journal of Banking and Finance (4.7). even though the Applied Economics Letters and Finance Research Letters having least cite score during 2011, the Finance Research Letters placed in the top with 9.3 cite score in 2021. The Finance Research Letter is followed by the Journal of Accounting and Economics with a cite score of 8.3 in 2021.

Table 3: Total publication per year (Latest 10-year period)

Journal/ Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pacific Basin Finance Journal	32	44	66	67	70	81	83	89	165	167	177
Journal of Banking and Finance	264	259	401	302	302	171	174	237	197	221	191
Journal of Corporate Finance	97	77	75	123	112	124	158	132	105	239	283
Managerial Finance	73	60	55	63	72	77	80	87	94	117	75
Journal of Accounting and Economics	35	56	31	31	37	49	44	42	44	39	50
Applied Economics Letters	320	343	314	270	271	270	325	318	319	347	475
International Review of Financial Analysis	40	55	99	134	123	159	86	112	123	164	260
Review of Quantitative Finance and Accounting	48	49	64	64	64	80	80	80	80	100	100
Finance Research Letters	26	25	23	52	96	163	160	160	240	376	411
Contemporary Accounting Research	56	47	56	46	66	61	74	79	87	87	95

Source: Elaborated by the authors and based on data by Scopus

Table 4: Cite score of Journals per year (Latest 10-year period)

Journal/ Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Pacific Basin Finance Journal	1.6	1.7	1.3	1.5	2	2.5	3.5	3.1	2.8	3.2	4.1
Journal of Banking and Finance	4.7	4.4	3.5	3.1	3.2	4.3	4.5	4.1	3.8	4.4	5.2
Journal of Corporate Finance	2.9	2.4	3	3.3	3	3.1	3.7	4.2	5	4.9	5.4
Managerial Finance	0	0	0	0	0	0.7	0.8	1	1.2	1.5	2
Journal of Accounting and Economics	6.5	6.8	9	6.9	8.3	6.8	6	6	7.1	7.4	8.3
Applied Economics Letters	0.5	0.6	0.6	0.7	0.9	0.9	1	1.1	1.3	1.4	1.8
International Review of Financial Analysis	2.2	1.8	1.4	1.4	1.8	2.5	3	3.4	3.8	4.9	7.2
Review of Quantitative Finance and Accounting	1.3	1.3	1.2	1.4	1.7	1.8	1.7	1.8	2.4	2.6	2.9
Finance Research Letters	0.8	0.8	1	1.1	0.8	0.8	1.3	2.1	3.8	5.3	9.3
Contemporary Accounting Research	3.6	3	3.3	4.1	4	4.7	4	4.1	4.3	4.3	5.2

Source: Elaborated by the authors and based on data by Scopus.

4.1.6. *Highly cited documents.* Table 5 presents the top documents on investor behavior during news announcements. The most influential document on this topic is “Investor psychology and security market under- and overreactions” (Daniel K. H. D., 1998) which were published in *The Journal of Finance* and has a total citation of 2259. They propose a theory of securities market under- and overreactions based on two well-known psychological biases: investor overconfidence about the precision of private information; and biased self-attribution, which causes asymmetric shifts in investors’ confidence as a function of their investment outcomes. Three documents published in the *Journal of Accounting and Economics* namely “Understanding earnings quality: A review of the proxies, their determinants and their consequences”, “Essays on disclosure” and “Capital markets research in accounting” also significantly contribute to this theme. The first one “Understanding earnings quality: A review of the proxies, their determinants and their consequences” by (Dechow P., 2010) having a total of 1292 citations, have used various measures as indications of "earnings quality" including persistence, accruals, smoothness, timeliness, loss avoidance, investor responsiveness, and external indicators such as restatements and SEC enforcement releases.

The second document “Essays on disclosure” by (Verrecchia, 2001), recommends information asymmetry reduction as a vehicle to integrate the efficiency of disclosure choice, the incentives to disclose, and the endogeneity of the capital market process as it involves the interactions among individual and diverse investors. The third document, “Capital markets research in accounting” by (Kothari, 2001), reviewed the studies which test market efficiency concerning accounting information, fundamental analysis, and value relevance of financial reporting. The article “Psychology and economics: Evidence from the field” published in the *Journal of Economic Literature*, by Dellavigna, 2009 had 934 citations and suggests that individuals deviate from the standard model in three respects: (1) nonstandard preferences, (2) nonstandard beliefs, and (3) nonstandard decision making.

The *Journal of Finance* publishes influential documents covering different aspects of this topic, namely “More Than Words: Quantifying Language to Measure Firms’ Fundamentals” by (Tetlock P.C. 2008), had 923 citations and explored that linguistic media content captures otherwise hard-to-quantify aspects of firms’ fundamentals, which investors quickly incorporate into stock prices. The article “Investor psychology and asset pricing” by (Hirshleifer, 2001), had 910 citations and proposed that security expected returns are determined by both risk and misvaluation. “Retail investor sentiment and return co-movements” by (Kumar A. 2006), had 570 citations and consistent with noise trader models, study finds that systematic retail trading explains return co-movements for stocks with high retail concentration, especially if these stocks are also costly to arbitrage, and the macroeconomic news and analyst earnings forecast revisions do not explain these results. Collectively, study findings support a role for investor sentiment in the formation of returns. The article “Driven to distraction: Extraneous events and underreaction to earnings news” by (L. S. Hirshleifer D. 2009), had 468 citations, in this study they tested the explanation that limited investor attention causes market underreactions, by measuring the information load faced by investors. The study found that immediate price and volume reaction to a firm’s earnings surprise is much weaker, and post-announcement drift much stronger, when a greater number of same-day earnings announcements are made by other firms. The article “Tests of Analysts’ Overreaction/Underreaction to Earnings Information as an Explanation for Anomalous Stock Price Behavior” by (Abarbanell and Bernard 1992), had 422 citations and explored whether security analysts underreact or overreact to prior earnings information, and whether any such behavior could explain previously documented anomalous stock price movements. The study provide evidence that analysts’ forecasts underreact to recent earnings.

Table 5: Top research papers				
No.	AUTHOR	DOCUMENT	SOURCE	TC
1	Daniel K. (1998)	Investor psychology and security market under- and overreactions	The Journal of Finance	2259
2	Dechow P. (2010)	Understanding earnings quality: A review of the proxies, their determinants and their consequences	Journal of Accounting and Economics	1292
3	Verrecchia R.E. (2001) Journal of Accounting and Economics	Essays on disclosure 1153		
4	Kothari S.P. (2001) Journal of Accounting and Economics	Capital markets research in accounting 986		
5	Dellavigna S. (2007)	Psychology and economics: Evidence from the field	Journal of Economic Literature	934
6	Tetlock P.C. (2008)	More Than Words: Quantifying Language to Measure Firms' Fundamentals	The Journal of Finance	923
7	Hirshleifer D. (2001) The Journal of Finance	Investor psychology and asset pricing 910		
8	Hirshleifer D. (2003b)	Limited attention, information disclosure, and financial reporting	Journal of Accounting and Economics	712
9	Kumar A. (2006)	Retail investor sentiment and return co-movements		

	The Journal of Finance	570			
10	Edmans A. (2011)	Does the stock market fully value intangibles? Employee satisfaction and equity prices	Journal of Financial Economics	562	
11	Harvey C.R. (2016) Review of Financial Studies	... and the Cross-Section of Expected Returns			
12	Libby R. (2002) Accounting, Organizations and Society	Experimental research in financial accounting			
13	Baker M. (2004) Journal of Financial Markets	Market liquidity as a sentiment indicator			
14	Hirshleifer D. (2009)	Driven to distraction: Extraneous events and under-reaction to earnings news	The Journal of Finance	468	
15	Abarbanell J.S. (1992)	Tests of Analysts' Overreaction/Underreaction to Earnings Information as an Explanation for Anomalous Stock Price Behavior	The Journal of Finance	422	
16	Sadka R. (2006)	Momentum and post-earnings-announcement drift anomalies: The role of liquidity risk	Journal of Financial Economics	392	
17	Hirshleifer D. (2003a)	Herd behaviour and cascading in capital markets: A review and synthesis	European Financial Management	390	
18	Pfarrer M. (2010)	A tale of two assets: The effects of firm reputation and celebrity on earnings surprises and Investors' reactions	Academy of Management Journal	380	
Elaborated by the authors and based on data by Scopus					
Note: TC= Total Citation.					

4.1.7. *Thematic clustering of literature on market behavior around news announcements.* A thematic evaluation of the main clusters in this domain was carried out to identify the subfields in this research area (Table 6). This was done so that the researchers could obtain a comprehensive understanding of the history of the relevant literature and locate the subfields in the literature. Through the use of bibliographic coupling, the research found that the existing literature on market behaviour around news releases contained four primary clusters. These four primary groups each focus on a distinct facet of market and investor behaviour.

The behaviour of markets, specifically the behaviour of stock market and specific segments of the stock market around news announcements is the subject of Cluster one. Studies that evaluated the behaviour of investors in relation to news announcements are included in the second cluster. These studies have concentrated on the responses of investors to a variety of news announcements, such as interim earnings announcements, dividend announcements, share price fluctuations, and announcements relating to the financial crisis. Irrational or irrational behaviour, often known as behavioural bias, is one of the most important qualities of investors. When there is a lot of volatility in the market, it is very easy to see how skewed investors' behaviour might be. The studies that investigate the prevalence of biased judgement in relation to news announcements are grouped together under the heading of cluster three. Herding, anchoring, and overreacting are the three types of heuristic bias that have been the primary focus of the majority of the research in this cluster. The findings of these studies demonstrate that investors' decisions become skewed or illogical as new information comes to light. The final group of research focuses on studies that investigated the effects of various types of news releases, such as scheduled news announcements, earnings announcements, OPEC news sentiment, corporate announcements, news connected to global pandemics, and stock price announcements.

Even while many academics have investigated numerous elements of investor behaviour around news announcements, many of the studies have concentrated on the influence of macro-economic announcements, notably on stock markets. These announcements' effects on commodity, precious metal, and currency markets should be studied by scholars. Investor bias beyond herding and overreaction must also be examined.

Table 6: Thematic clustering of documents

Cluster 1: Market behaviour around news announcements					
Document	Title	Year	Journal	Major research focus	
(Mishra and Mishra 2021)	COVID-19 pandemic and stock market reaction: empirical insights from 15 Asian countries	2021	Transnational Corporations Review	Behaviour of 15 selected Asian markets amid the pandemic.	
(Kutan and Muradoglu 2016)	Financial and real sector returns, IMF-related news, and the Asian crisis	2016	Finance Research Letters	Financial and real sectors of a stock market react to IMF announcements	
(Nikkinen et al. 2006)	Global stock market reactions to scheduled U.S. macroeconomic news announcements	2006	Global Finance Journal	Behaviour of global stock markets around U.S. macroeconomic news announcements.	
(Rahim et al. 2021)	Investor Behavior Responding to Changes in Trading Halt Conditions: Empirical Evidence from the Indonesia Stock Exchange	2021	Journal of Asian Finance, Economics and Business	Response of Indonesia Stock Exchange to changes in Trading Halt Condition	
Cluster 2: Investor behaviour around news announcements					
(Vieru, Perttunen, and Schadewitz 2006)	How investors trade around interim earnings announcements	2006	Journal of Business Finance and Accounting	Noninstitutional trading behaviour around interim earnings announcements	
(Kim, Ryu, and Yang 2019)	Investor sentiment, stock returns, and analyst recommendation changes: The KOSPI stock market	2019	Investment Analysts Journal	Investor sentiment around changes in analysts' recommendations announcements.	
(Saleh 2007).	Investor's reaction to dividend announcements: Parametric versus nonparametric approach	2007	Applied Financial Economics Letters	Behaviour of investors towards dividend announcements	
(Mahmoudi, Docherty, and Melia 2022)	Firm-level investor sentiment and corporate announcement returns	2022	Journal of Banking and Finance	Investor sentiment around firm- and market-level announcements	
(Rezvanian, Turk, and Mehdiian 2011)	Investors' reactions to sharp price changes: Evidence from equity markets of the People's Republic of China	2011	Global Finance Journal	Investors' reactions to extreme price changes in Chinese equity markets.	

Cluster 3: News announcements and investor bias			
(Bouteska and Regaieg 2020)	Psychology and behavioral finance: Anchoring bias by financial analysts on the Tunisian stock market	2020	EuroMed Journal of Business
(Black et al. 2017)	Uncertainty triggers overreaction: evidence from corporate takeovers	2017	European Journal of Finance
(Dalgıç, Ekinçi, and Ersan 2021)	Daily and Intraday Herding within Different Types of Investors in Borsa Istanbul	2021	Emerging Markets Finance and Trade
(Shie and Chang 2017)	The herding behaviour and announcement of insider transfer trading: A study in Taiwan	2017	Investment Analysts Journal
(Abarbanell et al. 2001)	Investor and (value line) analyst underreaction to information about future earnings: The corrective role of non-earnings-surprise information	2001	Journal of Accounting Research
(Indärs, Savin, and Lublóy 2019)	Herding behaviour in an emerging market: Evidence from the Moscow Exchange	2019	Emerging Markets Review
			Presence of anchoring bias among financial analysts on the Tunisian stock market.
			The overreaction of investors to private information
			Daily and intraday herd behaviour of investors of Borsa Istanbul (BIST) market.
			Existence of herding behaviour on the market response to insider transfer trades.
			Underreaction of analysts and investors in response to the next earnings announcement
			Presence of herding towards the market consensus for Russian stocks.

Cluster 4: Categorisation of news announcements				
(López 2018)	The behaviour of energy-related volatility indices around scheduled news announcements: Implications for variance swap investments	2018	Energy Economics	The effect of scheduled news announcements on two energy-related volatility indices calculated by the Chicago Board of Options Exchange.
(Syed and Bajwa 2018)	Earnings announcements, stock price reaction and market efficiency – the case of Saudi Arabia	2018	International Journal of Islamic and Middle Eastern Finance and Management	Saudi Arabia reaction against the quarterly earnings announcements.
(L. H. Chen, Jiang, and Zhu 2018)	Total attention: The effect of macroeconomic news on market reaction to earnings news	2018	Journal of Banking and Finance	The effect of macroeconomic news on investor attention.
(Gupta and Banerjee 2019)	Does OPEC news sentiment influence stock returns of energy firms in the United States?	2019	Energy Economics	The impact of foreign news sentiment on the financial performance of domestic firms in the energy sector
(Zheng 2020)	The type of corporate announcements and its implication on trading behaviour	2020	Accounting and Finance	Trading behaviour around expected and unexpected announcements
(Yang, Segara, and Feng 2019)	Stock price movements and trading behaviors around merger and acquisition announcements: Evidence from the Korean stock market	2019	International Journal of Managerial Finance	Price movement and trading behaviour around mergers and acquisitions announcements in Korea
(Sun, Bao, and Lu 2021)	Coronavirus (Covid-19) outbreak, investor sentiment, and medical portfolio: Evidence from China, Hong Kong, Korea, Japan, and U.S	2021	Pacific Basin Finance Journal	Trading behavior and investor sentiment around Coronavirus-related news (CRNs) and economic-related announcements (ERAs) associated with the Coronavirus outbreak

Source: Authors evaluation using data extracted from Scopus

4.1.8. *Factor analysis of market behavior themes.* To identify the key themes in investor behaviour around news announcements literature, the study also performed a factor analysis.

Communalities							
SI		Initial	Extraction	SI		Initial	Extraction
1	Behaviour bias	1.000	.910	18	Over confidence	1.000	.891
2	Abnormal return	1.000	.916	19	China	1.000	.990
3	Earnings announcements	1.000	.929	20	Anchoring bias	1.000	.901
4	Information asymmetry	1.000	.910	21	Volatility	1.000	.918
5	Investor behaviour	1.000	.901	22	Stock market	1.000	.870
6	Underreaction	1.000	.956	23	Ambiguity	1.000	.888
7	Risk management	1.000	.911	24	Disposition effect	1.000	.860
8	Mergers and acquisition	1.000	.931	25	Risk aversion	1.000	.851
9	Investor sentiment	1.000	.900	26	Herding	1.000	.909
10	Anomalies	1.000	.890	27	Trading volume	1.000	.990
11	Stock return	1.000	.901	28	Overreaction	1.000	.971
12	Individual investors	1.000	.991	29	Mutual fund	1.000	.951
13	News announcements	1.000	.900	30	Abnormal return	1.000	.900
14	Earnings momentum	1.000	.911	31	Post-earning announc. drift	1.000	.989
15	Earnings management	1.000	.921	32	Market efficiency	1.000	.931
16	Heuristics	1.000	.941	33	Emerging market	1.000	.801
17	Capital market	1.000	.902	34	Financial crisis	1.000	.891

Sources: Author calculation.

We evaluated the thematic variables that covered 34 initial themes and were mentioned in at least five works on investor behaviour using the statistical programme SPSS, as suggested by (Pattnaik et al. 2020).

Factors				
	Behaviour bias	News announcements	Investor behaviour	Market behaviour
Behaviour bias	.994			
Underreaction	.994			
Heuristics	.994			
Overconfidence	.994			
Ambiguity	.994			
Disposition effect	.994			
Risk aversion	.984			
Herding	.985			
Overreaction	.955			
Anchoring bias	.951			
Post-earning announc drift		.947		
Earnings announcements		.947		
Mergers and acquisition		.943		
News announcements		.941		
Earnings momentum		.941		
Earnings management		.940		
Information asymmetry		.885		

The factor analysis is subject to Principal Component Analysis (PCA) and the significance of the KMO statistics and the Bartlett’s test of sphericity demonstrate the usefulness of exploratory factor analysis.

	Behaviour bias	News announcements	Investor behaviour	Market behaviour
Investor behaviour			.957	
Stock return			.957	
Investor sentiment			.954	
Volatility			.951	
Risk management			.950	
Trading volume			.949	
Individual investors			.945	
Abnormal return			.894	
Stock market				.995
Mutual fund				.995
Capital market				.995
Financial crisis				.995
Emerging market				.987
China				.978
Anomalies				.971
Market efficiency				.969
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
Source: Author calculation.				

Four themes were identified in the initial evaluation using Varimax rotation and Kaizer normalisation, and they together accounted for around 98.16% of the variance in themes.

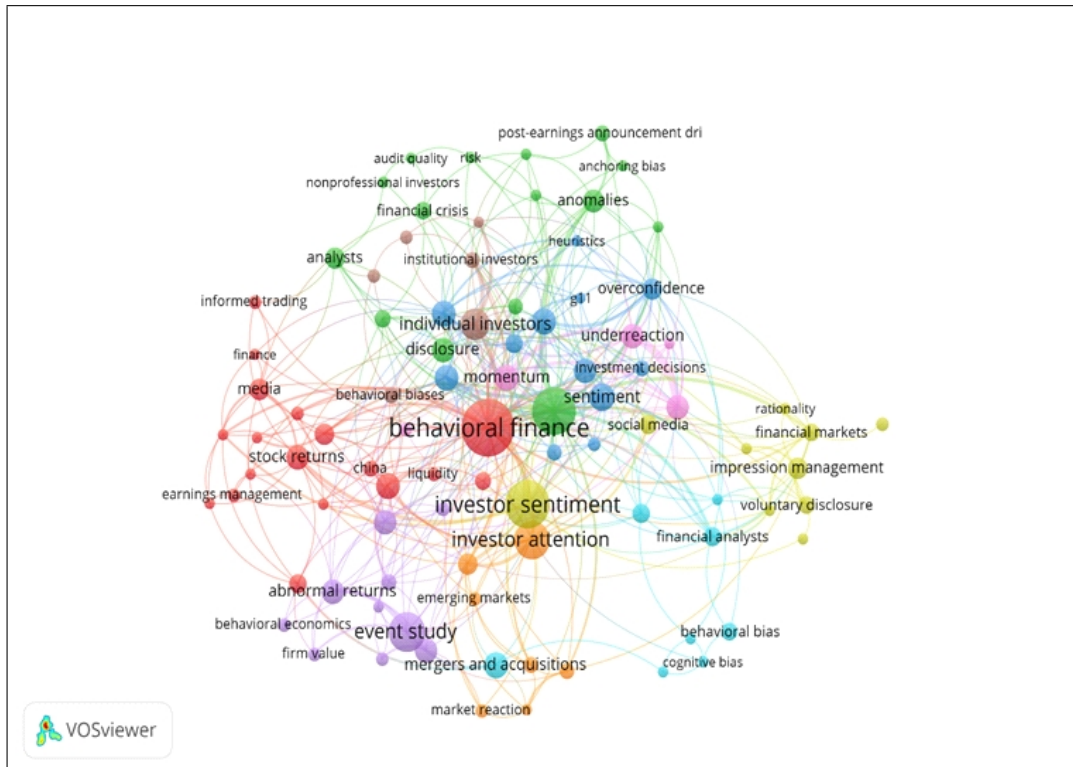


Figure 4: Network visualization of author keywords

Then we suppress the co-efficient by fixing the limit to 0.40, which eliminate the cross loadings of themes. Table 7 and 8 depicts the communalities and factor loadings of themes of investor behaviour. The entire themes were divided into four factors namely behavioural bias, news announcements, investor behaviour and market behaviour.

4.1.9. *Keyword analysis.* For identifying the most commonly used author keywords in this theme of research, we conducted a co-occurrence (author keyword) analysis using VOSviewer (Figure 4). The minimum keyword frequency was limited to four in order to identify the essential author keyword co-occurrences, resulting in the 102 keywords shown in Figure 4. Many authors used the terms behavioral finance, market efficiency, and investor sentiment as their top three keywords. At the same time, event analysis, investor attention, sentiment, earnings announcements, and overreaction are frequently used. The most common keywords behavioral finance and market efficiency had the most connections, with total link strength of 79 and 72, respectively.

4.1.10. *Co-citation analysis.* The Table 9, summarized the Co-citation analysis of sources and authors. The Co-citation occurs when two documents published in different journals receive a citation from the same third source (Flores-Sosa, Merigo, & Avilés-Ochoa, 2022) or when the two documents are said to be co-cited when they both appear in the reference list of a third document (Kadiyala and Raju 2004). Co-citation of authors and journals were presented in Table 5.

SOURCES	TC	AUTHOR	TC
Journal of Finance	4764	Shleifer, A.	780
Journal of Financial Economics	3437	Hirshleifer, D.	745
Journal of Accounting Research	1648	Fama, E.F.	666
Journal of Accounting and Economics	1488	Odean, T.	660
Review of Financial Studies	1420	Kahneman, D.	510
The Accounting Review	1344	Titman, S.	487
Journal of Financial Economics	867	Tversky, A.	452
Academy of Management Journal	765	Subrahmanyam, A.	446
American Economic Review	737	Lakonishok, J.	410
Strategic Management Journal	709	Jegadeesh, N.	388
Journal of Financial and Quantitative Analysis	677	French, K.R.	376
Econometrica	666	Barber, B.M.	375
Journal of Political Economy	595	Barberis, N.	355
Quarterly Journal of Economics	571	Wurgler, J.	351
Contemporary Accounting Research	556	Baker, M.	351
Journal of Business	470	Teoh, S.H.	327
Management Science	413	Grinblatt, M.	324
Review of Accounting Studies	383	Fama, E.	304
Accounting Review	382	Thaler, R.	303
Elaborated by the authors and based on data by Scopus.			
Note: TC= Total Citation.			

The most co-cited author in this field of research is Shleifer, a and Hirshleifer, d, with citations of 780 and 745 respectively. Documents authored by Fama, e.f., Odean, t, and Kahneman, d. are also having higher amount of co-citation with citations of 666, 660, and 510 respectively. In terms of co-citation of sources, Journal of Finance is the most impactful journal with citations

of 4764. Followed by *Journal of Financial Economics*, *Journal of Accounting Research*, *Journal of Accounting and Economics*, and *Review of Financial Studies*.

5. CONCLUSION

This study conducted a bibliometric analysis of literature on market behavior around news announcements to reveal pattern of development, prolific authors, journals and countries in this literature and exploring main themes and subfields in this area of research to identify the research gap to propose future scope. By using the Scopus database, we found 815 documents published in this area of research between 1992 and 2021. The study used a variety of bibliometric analysis techniques in this study to provide quantitative statistics and a comprehensive review of the key influential and intellectual structure of research works on the topic. With the use of citation and co-citation analysis study discovered the most influential and impactful authors, documents, and journals in this theme of research; (Blanchard et al., 1998) is the most influential author, who received highest citation (2115) for the paper named "A model of investor sentiment" in the year 1991. The California is the most productive university, further the study identified the importance of the United States of America in terms of scientific production. "Investor psychology and security market under- and overreactions" (Daniel K. H. D., 1998) is the most impactful document, which was published in *The Journal of Finance* has a total of 2259 citations. The *Journal of financial economics* having highest citation (3759) for articles published during this period. Additionally total publication and cite score per year for latest 10-year period reveals the growth of journals. While examining the literature of investor behaviour around news announcements, it is clear that the significant growth of research in this field after the financial crisis 2008.

In a cluster analysis of the major research on investor behaviour, the study found four key clusters: market behaviour in response to news announcements, investor behaviour in around news announcements, investor bias, and categorisation of different types of news announcement affecting the market and investor's decision making. Even though many academics have made a substantial effort to explore various elements of investor behaviour around news announcements, many of the studies have concentrated on the influence of news announcements on a particular financial market, the stock market. Researchers need to pay close attention to how these releases may affect other financial markets, namely; commodities, precious metals, and currency markets. One of the main subfields in this literature is the impact of news announcement on investor bias. Even though beyond herding bias and overreaction, the influence of those announcements on investor bias must also be looked into. In order to confirm the research gap identified through cluster analysis, the study performed Confirmatory Factor Analysis using statistical software. The factor analysis divided main themes in this literature into four factor components.

This study has significant implication on research community, academicians and investors. Firstly, the study will aid researchers studying investor behaviour and sentiment in comprehending how the literature on investor emotion around news announcements has changed over time. Additionally, it will help the researchers find the influential publications and writers in this area of study. As Investors may get irrational during news announcements, which could result in bad decisions, the study will also assist investors in managing their emotions, particularly during market announcements, by assisting them in understanding their attitudes and emotions during news announcements. Similarly, this will enable managers and other market professionals to gain insight into investor emotion, enabling them to offer financial advice.

To our knowledge, this is one of the first papers to look at the literature of investor behaviour/sentiment in response to stock market news announcements from a bibliometric perspective. It enables academics and researchers to investigate and build a quantitative foundation for scientific progress in this field. Finally, the current study has theoretically contributed to the theme of investor behaviour in the context of news announcements by illustrating the path of scientific production, as well as the major studies and authors.

5.1. Limitations of the study. This study faced some limitations, the first being the accuracy of datasets extracted from the Scopus database. Therefore, other well-known databases such as Web of Science should be used and incorporated with Scopus to obtain vast number of literatures in this them, which is expected to increase the accuracy of findings. Thematic analysis of main clusters was not considered in this study, so it is possible to conduct a cluster/thematic analysis of the main clusters in this theme using bibliographic coupling of documents.

5.2. Recommendation future research. In this study we conducted a bibliometric analysis of literature available in the Scopus database between 1992 and 2021 related to the theme of investor sentiment in response to news announcements. Based on this analysis, more systematic review work can be done by limiting the articles, which may provide a clear picture of the theme and its evolution over time. Furthermore, the impact of news announcements on the stock market has been the focus of several research. Researchers must closely monitor how these releases might impact the commodities, precious metals, and currency markets, among other financial markets. Beyond overreaction and herding bias, the impact of the announcements on investor bias needs to be investigated.

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