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Journal of Management

Bibliometric Research on Sustainability
Practices in Higher Education: 1989-2023

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Dr. Vinit Vijay Dani
Dr. Ranjan Jaykant Sabhaya

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The Gavesana Journal of Management is a bi-annual refereed journal of the Vignana Jyothi Institute of Management. Its objective is to disseminate knowledge of contemporary issues related to management and development. The journal seeks to serve as a platform for intellectuals to share the rapid strides made in contemporary research. The Research Journal has been registered with the Registrar of Newspapers for India (RNI) vide No. 108534/2010 dated 1/3/2011.

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Editorial

In this VUCA world, the world is facing challenges on many levels: economically, politically, environmentally, and socially. There is high-level corruption, bad governance, inflation, bad policymaking, governments that don't care about people, poverty, lack of proper primary to tertiary education, and more. It's getting harder and harder to get a clear, insightful, and forward-looking picture of the economy and business, even though there are a lot of statistics on businesses, markets, and economies. In this age of huge amounts of information, it's more important than ever to understand how economics affects business, the environment, and politics. Time and time again, financial crises happen all over the world when economies have too much or too little cash on hand. Adam Smith thought that "moral hazards" and their "immoral results" in policy issues are what cause financial crises. You should know that financial and accounting tricks can no longer protect you from the dangers of a financial crisis, moral hazard, and bad outcomes; there is only one way to do this: create well-balanced liquidity. It's possible that no country in the world has never had an economic or financial crisis. Any economic crisis leads to and results in businesses failing, which takes away people's welfare.

These days, it would be a big mistake to do business without understanding how the economy works.

Business and economics go hand in hand now. 'Business management' is getting trickier as more and more business and economics knowledge is combined. In the early 1990s, a new field of study called "Business Economics" began to grow in developed countries. It then spread to other countries.

The field of business economics is based on the part of economic theory that studies businesses and how they are organised and how they interact with things like capital, labour, products, and markets. The basic economic theory of firms tries to explain why firms start up, stay in business, and grow. It does this by showing how important organisational structure is and how firms interact with their bosses, workers, investors, customers, the government, and the environment. The goal of economics of business is to use economic ideas in the real world of business and to help managers make decisions.

A lot of universities in the west now offer Business Economics classes at both the undergraduate and graduate levels. These classes teach different ways of looking at the subject. Harvard University says that "business economics" is the study of how to use economic methods to look at real-world business and management issues.

In India, where politics, the economy, and society are all very complicated, businesses need to change how they run, who owns them, how they deal with stakeholders, and how they focus on the market.

So, they need the application of economics to be combined with the most important management tasks.

Dr. CH S Durga Prasad
Editor
Gavesana Journal of Management

A Bibliometric Research on Sustainability Practices in Higher Education: 1989-2023

Dr. Falguni H Pandya* | Dr. Vinit Vijay Dani** | Dr. Ranjan Jaykant Sabhaya***

Abstract

The aim of this research is to map the thorough and widespread outline in sustainable practices in the higher education. To take comprehensive and exhaustive area, bibliometric method was applied for a period of 1989 to 2023. The present study gone through 1325 documents from Dimensions database. After applying various screening criteria, 744 articles were considered for further examination in VOS viewer. Various bibliometric mapping tools like citation-authors, citation-documents, citation-country, bibliographic coupling-authors, bibliographic coupling-organization, bibliographic coupling -country and many others were applied to get the holistic view of the research undertaken in this field. The upsurge in research from year 2019 shows awareness for sustainability and it is a welcome stage. From the affiliation statistics database it was found that volume of research is mainly concentrated in developing countries.

Key words: Sustainability, Higher Education, Bibliometric View, Education, Sustainable Development

Introduction

'Our challenge is to transition from Information Education to Wisdom Education, which will bring us closer to the goals of Sustainable Development (SD)' ---Stephen Sterling (2001).

One of the key tenets of sustainable development is ecological balance and inclusive growth, which translates to lessening income and opportunity disparities and fostering empowerment. The consequences of production and consumption practises that are not sustainable have been observed by industry, the economy, and society. According to the UN, educational institutions need to take the lead in implementing sustainable practises and policies with the assistance of associated stakeholders, teachers, students, and other relevant parties.

In the early 1990s, educators all over the world realised the importance to integrate environment and thoughtful education to young minds. They go the concerns for wasteful or excess use of resources and ecological degradation. Further, initiatives by UN made it more clear for the need of bringing sustainability in the education to address the various 17 goals from the scratch. The world has seen the notable efforts to bring awareness and to integrate education for the joints efforts towards sustainable development. It is because it was believed that education paves the way for the knowledge development and to build the attitude to create sustainable society and nation.

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17 sustainable developmental goals (SDGs) identified by the UN reflects the need for efforts at global level. These SDGs starts from ensuring quality education to all children to environmental, ecological balance, gender equality and many more. As per the UN's guidelines, education must be capable to foster sustainable values, attitudes, and behaviours among the next generations in order to achieve other sustainable goals and agendas.

Relevant Literature

Alexio et al. (2018) conducted a survey of the rectors, presidents, and directors of faculties, departments, and schools at Portuguese universities and discovered that Portuguese Higher Education Institutes (HEIs) are primarily concerned with the social dimension of sustainability. The authors discovered that in sustainability practices, the economic dimension is second, the institutional dimension is third, and the environmental dimension is last. Furthermore, the authors discovered that only 11% of HEIs are innovators in the implementation of SD practices and have implemented less than 34% of the SD practices examined.

Nria and Elas's (2021) study attempted to investigate how Spanish Public and Private Universities (SUE) are incorporating sustainability practices into their research, internationalisation, governance, and campus operations. The study discovered that, while SD is recognised as critical to HEIs and society, it is not rooted in HEI systems, strategies, and actions.

Walter et al (2019) followed in the footsteps of Alexio et al (2018), attempting to investigate practices related to social responsibility and sustainability initiatives at HEIs.

From 2009 to 2017, Paulo et al (2019) studied sustainability practices at the University of Minho and proposed a bottom-up and top-down approach for successful organisational culture change. Furthermore, the authors advocated for the incorporation of collective networks to promote sustainability.

According to the findings of Xiong and Mok (2020), HEIs must pay close attention to the external impact of sustainability practices on communities and society. The authors also suggested that universities and HEIs go beyond the narrow definition of sustainable development and address the negative consequences of higher education's massification, privatisation, and internationalisation.

The purpose behind SDGs 15 is to integrate morals, philosophy, and practices of sustainable development into formal and informal education. As per the researchers and practitioners, sustainability through education is the most fundamental of the SDGs and these applies to not only primary and secondary education but to tertiary education also. As primary and secondary education teachers are trained at higher education institutes; HEIs can play a pivotal role to impart awareness, ability, and mind-set to the forthcoming generations. The higher education institutions and universities can take lead to craft widespread implication for global efforts to find sustainable solutions as curricula taught at various branches represent areas to develop and nurture students to imbibe sustainable attitudes and practices. In other words, HEIs can acts as an initiation point as well as buffer between global citizens and industry. As per researchers and practitioners, education with sustainable motive is the new cultures which takes holistic perspectives through multicultural, international, and future oriented perspectives on their decision making and behaviour. This new approach is participative process for the manifestation of a sustainable future. It should not be just considered as an education curriculum, but as a transformative learning aimed at social change.

Avila's bibliometric research discovered that the majority of the publications were from the United States, the United Kingdom, China, Australia, and Canada and covered a wide range of topics including health, education, energy management, agriculture, and ecological balance.

This study attempted to extend previous research reviews by mapping sustainability practices in higher education institutions from 1989 to 2023. The bibliometric analysis seeks to map the evolution of higher education for sustainable development from 1989 to 2023. This study addressed the research questions listed below.

RQ 1. What is the total volume, growth trajectory and published research of sustainability in higher education across countries?

RQ 2. Which authors, organization and country have higher influence on the research on sustainability in higher education?

This mapping study identified 1325 documents and finally screened 744 research papers by applying various screening criteria. Bibliometric data associated with this was analysed by using VOSviewer software package. Data analysis done with this package are descriptive statistics, direct citation analysis, co-citation analysis etc. An effort has been made to extend the studies in bibliometric mapping done by the previous studies.

Research Methodology

Bibliometric analysis can handle and examine very large amounts of data, and it is compatible with various software such as Gephi and VOSviewer, as well as various data sources such as Scopus, Web of Science, Dimensions, and so on (Donthu et al, 2021b, 2020; Kumar et al, 2021a, 2022). A retrospective review of previous studies helps to investigate and summarise the performance in each research field (Baker et al, 2021a, b; Kumar et al 2022; Mukherjee et al 2021, 2022; Viglia et al 2022).

A systematic literature review (SLR) and bibliometric analysis were performed to investigate the above-mentioned research questions (Chen et al. 2016; Bhatt et al. 2020; Gonzalez-Torres et al. 2020). Bibliometric analysis is used to perform various interactive techniques, and SLR is used to retrieve relevant information.

The primary goal of this research is to investigate the knowledge structure of higher education institutions' sustainability practices.

Materials and Methods

Source and Scope

This science mapping technique for the study of literature reviews research grounded in bibliometric methods do not test the substantive findings of the research papers/studies. It extends to document and synthesize broad trends which describe the broad framework, composition, and scholarly formation of the information base. This study and paper offer insights by providing patterns of knowledge accumulation of previous studies.

Dimensions data base was used as the basis for identification of documents for this study. Dimensions provided a broad landscape of areas/study related to sustainability practices in the higher education all over the globe. The journey to search required documents in the area of sustainability practices in the higher education was framed by many factors like time, document type, language and topical emphasis. In order

to cover wide landscape of the research carried out in this study, research papers/articles from 1989 were considered for this study. This approach differs with that of Avila (2018) and Hallinger and Chatpinyakooop (2019).

In order to get the focused results in the given area; only research papers in the area of sustainable practices by the higher education institutions published in journals were considered and articles, book chapters, books, conference papers were excluded. Further, citation analysis was conducted to capture highly cited papers.

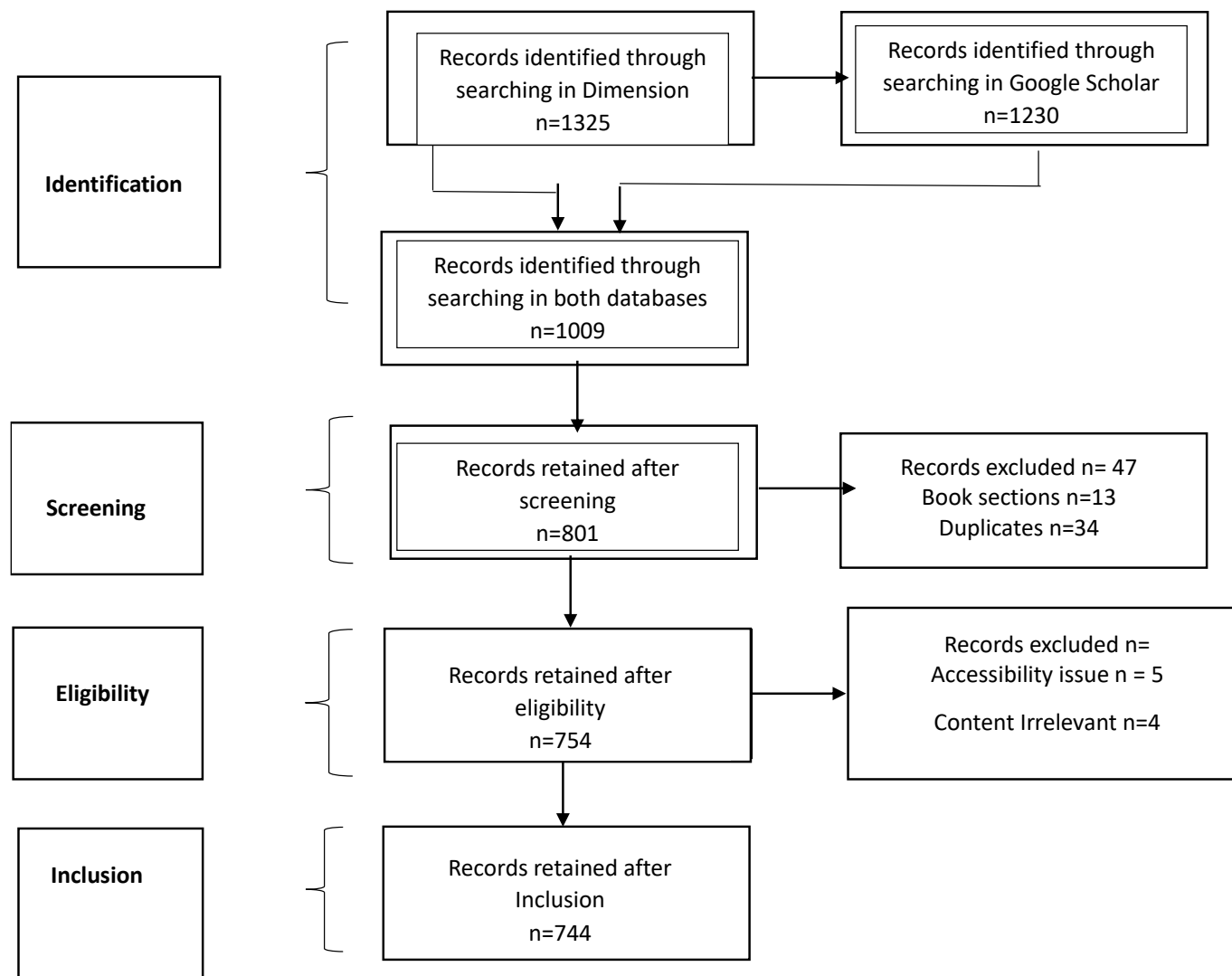
To cover the term “sustainability” and to get the documents of this area various key words like Sustainable Practices, Sustainable Approach, Green Practices, Ecological Balance Practices and Environmental Practices were used with different combinations for Higher Education, University Education, Higher Studies, Moral Education, Education with Purpose etc. The purpose behind usage of this wide range term is to include all possible research as sustainability is a broad concept and it has evolved time to time from many related terms/concepts like green practice, ecological balance, environmental practices etc. This approach assumed that the machine could consider this or related terms in title, abstract, keywords, main text etc.

It was decided to consider only those documents which are published in English and Dimensions’ coverage of search documents in other languages is quite limited. It is the limitation of the review as it can not cover the research published of this area in other languages. For the search process, PRISMA guidelines was followed. Below mentioned is the keyword string used to generate the initial database of research documents in Dimensions. To study and map only relevant research documents, title and abstracts of documents were read and examined to determine their suitability for the said topic. There were many articles addressing sustainability at the primary/ secondary school level but were not considered as they were outside the topical focus of sustainability in higher education. This left the database with 744 articles to study and review.

Search String

Sustainable Practices OR Sustainable Approach OR Green Practices OR Ecological Balance Practices OR Environmental Practices AND Higher Education OR University Education OR Higher Studies OR Moral Education OR Education with Purpose, 2023 or 2022 or 2021 or 2020 or 2019 or 2018 or 2017 or 2016 or 2015 or 2014 or 2013 or 2012 or 2011 or 2010 or 2009 or 2008 or 2007 or 2006 or 2005 or 2004 or 2003 or 2002 or 2001 or 2000 or 1999 or 1998 or 1997 or 1996 or 1995 or 1994 or 1993 or 1992 or 1991 or 1990 or 1989, 3901 Curriculum and Pedagogy, 11 Sustainable Cities and Communities or 13 Climate Action or 12 Responsible Consumption and Production or 7 Affordable and Clean Energy or 8 Decent Work and Economic Growth or 3 Good Health and Well Being or 4 Quality Education, Article, Sustainability or Education Sciences or Environmental Education Research or International Journal of Sustainability in Higher Education or Frontiers in Education or Teaching and Teacher Education or Integration of Education or Education and Information Technologies or Professional Development in Education, VABB-SHW or UGC Journal List Group II or ERA 2023 or Norwegian register level 1 or ERA 2015 or ERA 2018 or DOAJ or ERIH PLUS or Norwegian register level 2 or Non-APC journals, All OA or Gold or Closed or Hybrid or Green

Figure 1: Flow chart of the PRISMA protocol



Data Family and Examination

Finally, a database of 744 research documents was downloaded in an excel file that included meta data related to each document such as author name(s), affiliations, article title, source, reference, key words, abstracts, and so on. This excel file was used in VOSViewer to filter the data and examine the trends, patterns, and so on. Descriptive statistics, on the other hand, provide an overview of size, growth trajectory, geographical distribution, and so on. Descriptive statistics were performed in MS Excel.

Citation and co-citation analysis were used to identify prominent authors for various purposes. As direct citation analysis identifies prominent authors, publications, and journals within the scope of sustainability practices in higher education institutions by counting the number of times a document appears in the review database, co-citation analysis provides complementary insights with scholarly effectiveness. Co-citation, according to Zupic and Cater (2015), is the frequency of two units, i.e. 1. documents and authors;

2. Authors, journals, and so on. A matrix is created between two different items in a co-citation analysis by using co-citation frequencies as the input for analysis.

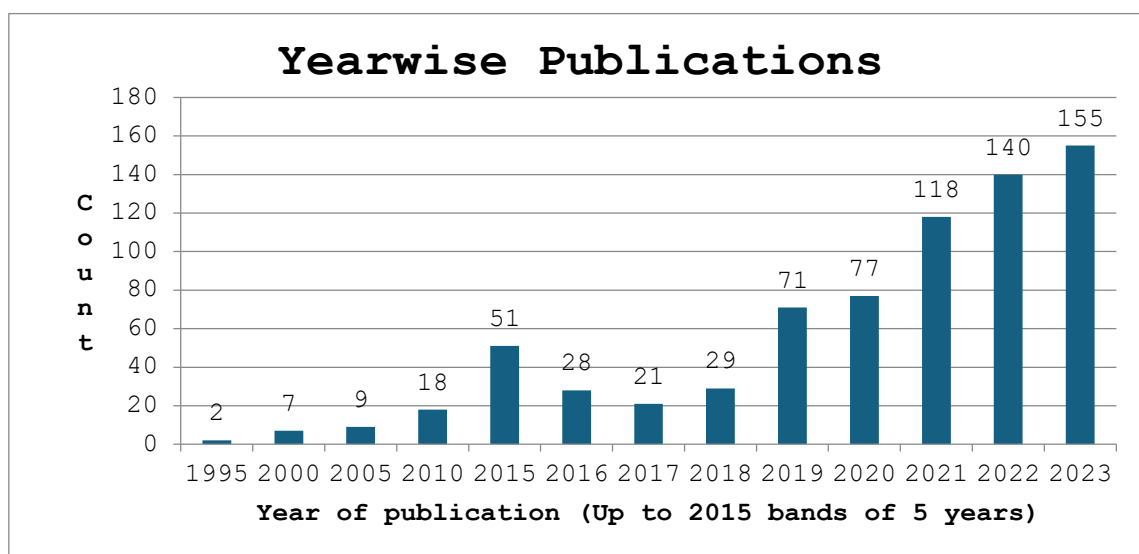
Because it is based on the documents mentioned in the reference lists rather than the review documents on their own, co-citation analysis can capture a larger and broader overview. When compared to citation analysis, co-citation analysis provides a more comprehensive picture of a document's scholarly impact. In other words, co-citation analysis supplements and reinforces the findings of direct citation analysis. Co-citation analysis generates a measure of similarity' between documents, authors, or journals in addition to providing numbers/counts. It also depicts author relationships based on patterns of co-citation by other scholars. VOS viewer software was used to generate graphical representations of social network maps' of interwoven relationships among various aspects of the given topic's documents. Co-citation maps are used to analyse various data base relational pieces. Author co-citation analysis, for example, provides scholarly frameworks of a data base by analysing similarities among authors in the literature.

Results

Following sections provides analysis based on the research questions mentioned earlier.

As mentioned earlier the scope of the database/research papers are decided to limit only research papers published in journals and other research document published in book, book chapters, conference proceedings were excluded. This gives more focused and specific body of publication.

Figure 2: Year wise Publication of Documents for Sustainability Practices in the Higher Education



(Source: Prepared based on the Data taken from Dimensions)

Longitudinal examination of the bibliometric data suggests that research in this field has evolved in three broad stages.

1. Evolving Stage: From 1995 to 2015 87 documents were published and data are shown in the band of five years.
2. Mature stage: From 2016 to till 2019, publication of 121 documents shows mature stage.

Accelerating growth stage: it shows spike in the documents published in sustainability practices in higher education from 2020 to till 2023.

The above figure shows that research in the given field is of recent vintage and generating interest among academicians and scholars all over the world. In 2015, the United Nations General Assembly (UNGA)

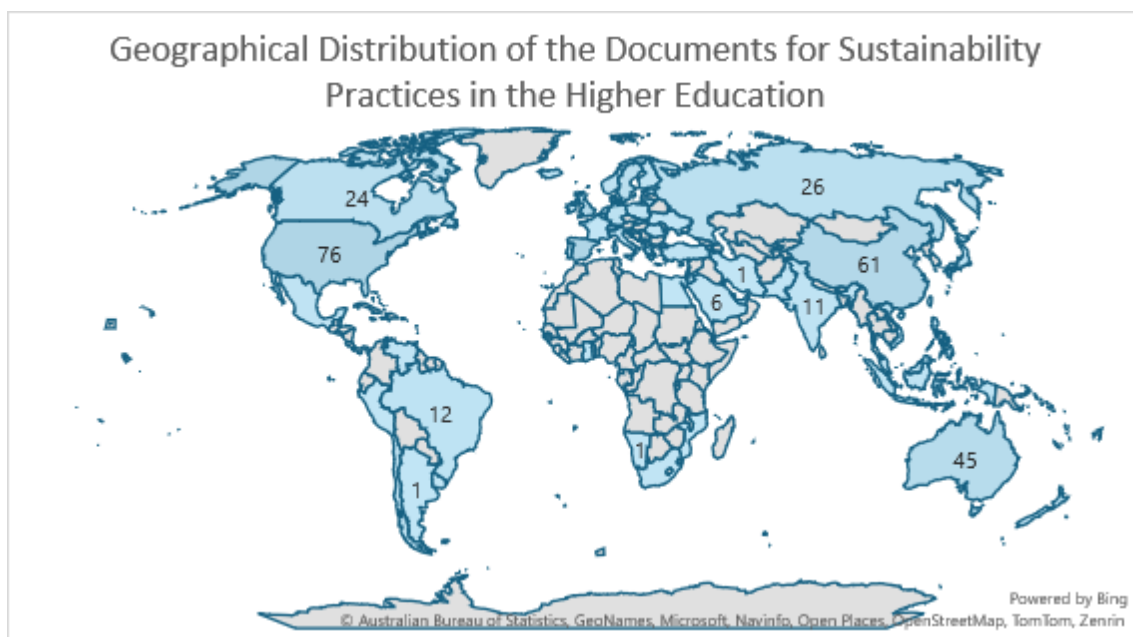
created the SDGs as a part of the Post-2015 development goals replacing Millennium Development Goals. These SDGs are officially formed and adopted by the UNGA resolution known as 2030 Agenda. These 17 SDGs have identified specific targets for each goal, and it needs to be achieved by 2030. From the above figure, it can be inferred that even before formal announcement by UN in 2015, people are aware of sustainability and was practiced by educational institutes. After 2015, it took some time to get it accepted by the practitioners and has peaked up since 2019. This shows a welcome step.

Table 1: Countries and the No. of Publications

Country	No. of Publication	Country	No. of Publication	Country	No. of Publication
Albania	2	India	11	Netherlands	14
Argentina	1	Iceland	1	New Zealand	7
Australia	45	Indonesia	8	Norway	14
Belgium	6	Iran	1	Pakistan	6
Brazil	12	Ireland	6	Peru	1
Brunei	1	Israel	15	Philippines	2
Cambodia	1	Italy	5	Poland	9
Canada	24	Japan	7	Portugal	11
Chile	19	Jordan	1	Qatar	3
China	61	Kazakhstan	3	Romania	6
Cyprus	10	Lebanon	2	Russia	26
Denmark	2	Lithuania	2	Saudi Arabia	6
Ecuador	5	Malaysia	14	Singapore	3
Egypt	1	Malta	2	Slovakia	2
Estonia	2	Mexico	11	Slovenia	3
Finland	11	Morocco	3	South Africa	6
France	3	Mozambique	1	Spain	75
Germany	21	Namibia	1	Sweden	30
Ghana	1	United Arab Emirates	5	Switzerland	14
Greece	15	United Kingdom	50	Taiwan	20
United States	76	Venezuela	5	Turkey	10
Uruguay	2	Vietnam	2	Ukraine	1

(Source: Prepared based on the Data taken from Dimensions)

Figure 3: Geographical Distribution of the documents for Sustainability Practices in the Higher Education



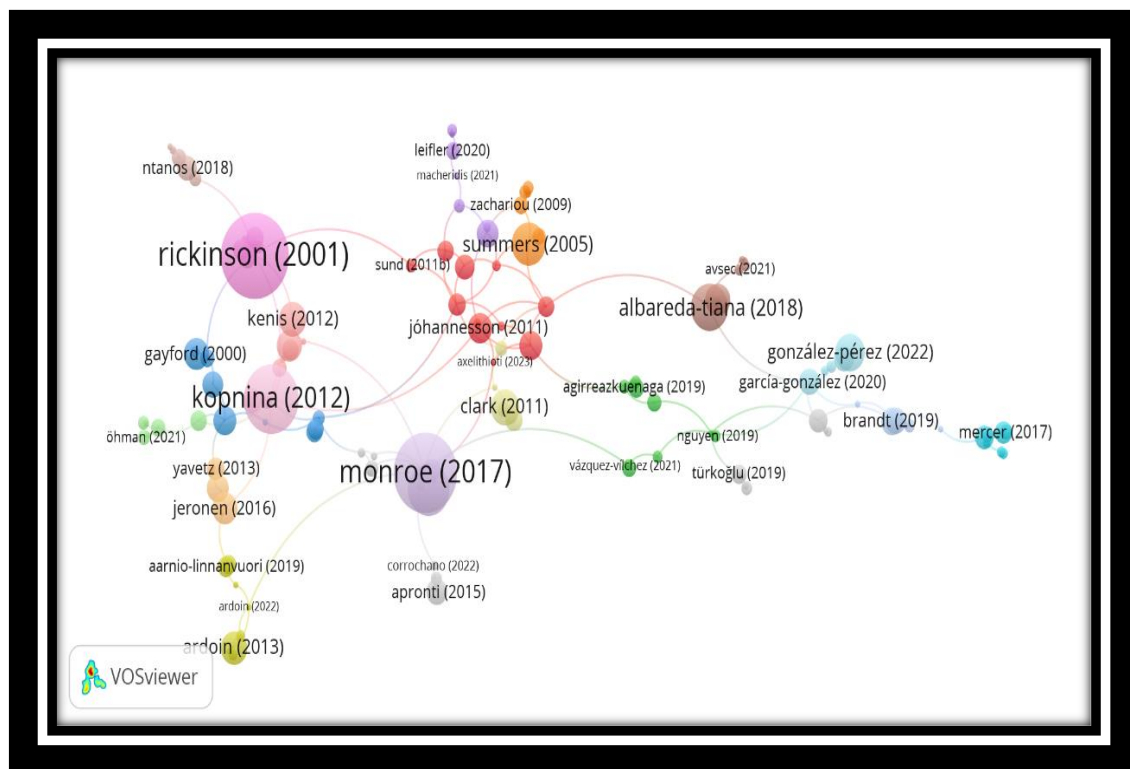
(Source: Prepared based on the Data taken from Dimensions)

Table 1 and figure 3 reveals the geographical distribution of the documents published in the area of sustainability practices in the higher education. It can be inferred from the table and figure that United States, Spain, United Kingdom, Germany, China, Australia, Greece, Chile, Canada, Sweden, Russia, Taiwan has reasonable research in this area. In other words, it can be said that developed countries have good contribution in this area compared to developing economies.

The scholarly framework of the data base for the area of sustainability practices in higher education institutions is revealed by author citation and co-citation analysis. This was investigated using VOS viewer, which visualises similarities among highly cited scholars in the literature.

According to McCain and White, the authors who are frequently cited and/or co-cited share common views or a series of questions in each field of study based on the citation and co-citation. As a result, 'clusters' of co-cited authors are used as proxies for common research areas of interest on an author co-citation map. These clusters are represented by common colours on the co-citation map, and the author's and/or research's influence in each field of study is indicated by the size of the node as well as the density of links to other authors. The co-citations between the authors are shown by the links between the authors. Figures 2 and 3 show that Rickinson (2001), Monroe (2017), Kopnina (2012), Summers (2005), and Albareda-Tiana (2018) are prominent authors with influential research. It has been discovered that these prominent authors have collaborated on significant research with other authors but not with one another.

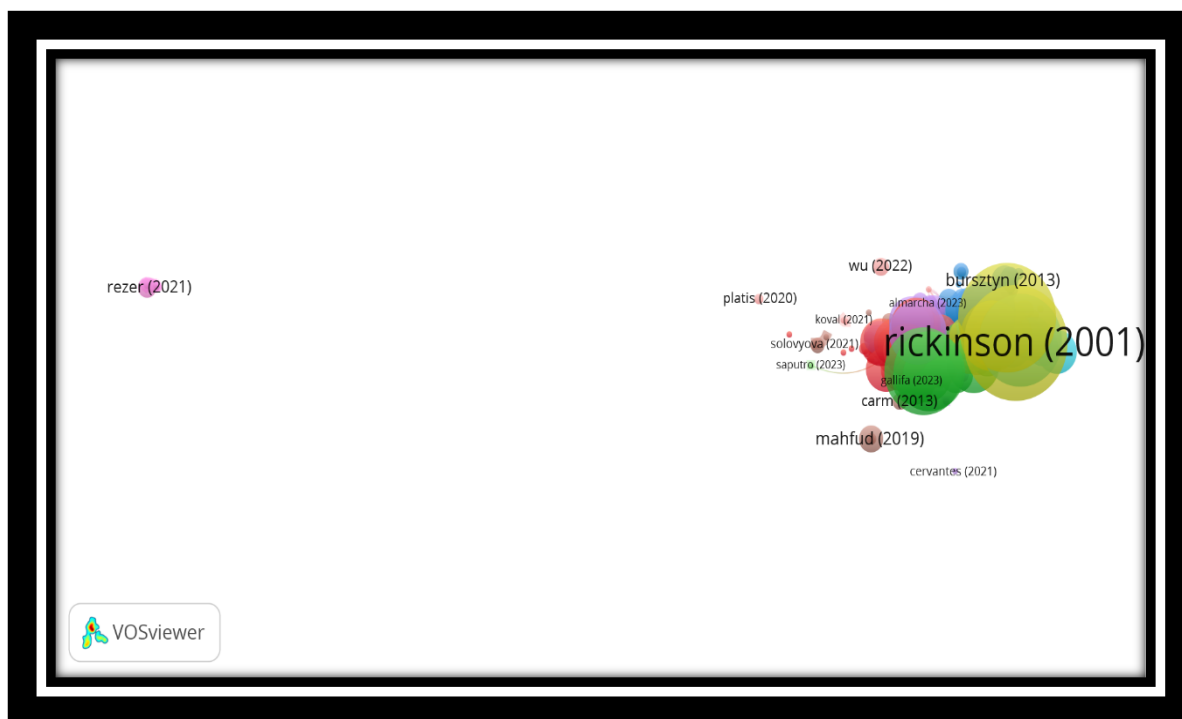
Figure 4: Citation and Document



(Source: Based on data collected from Dimensions and analysed using VOSviewer)

In confirmation with figure 3, figure 2 reveals that Rickinson (2001)'s reference is cited in most of the papers followed by Carm (2013), bursztyn (2013), almarcha (2023), galiffa (2023) and others. Size and density of the mode indicates link between bibliographic coupling and documents. It also shows that research by Rezer (2021) is not cited by anyone. When two documents or two authors give the same third reference, bibliographic coupling occurs. It is relevant to authors, documents, organization, and countries and provides an important source of information in the given knowledge base. As per Zupic and Cater (2015) it shows the similarity between two related studies which cannot be traced or understood by the citation link between two related studies. In this study, it has been tried to show 1. Bibliographic coupling with Authors 2. Bibliographic coupling with documents 3. Bibliographic coupling with organization and 4. Bibliographic coupling with country. There is a difference between co-citation and bibliographic coupling. Co-citation means when two documents receive a citation from the same third document and examination of author co-citation analysis gives insight into connection between authors and their published work (Chen et al., 2001).

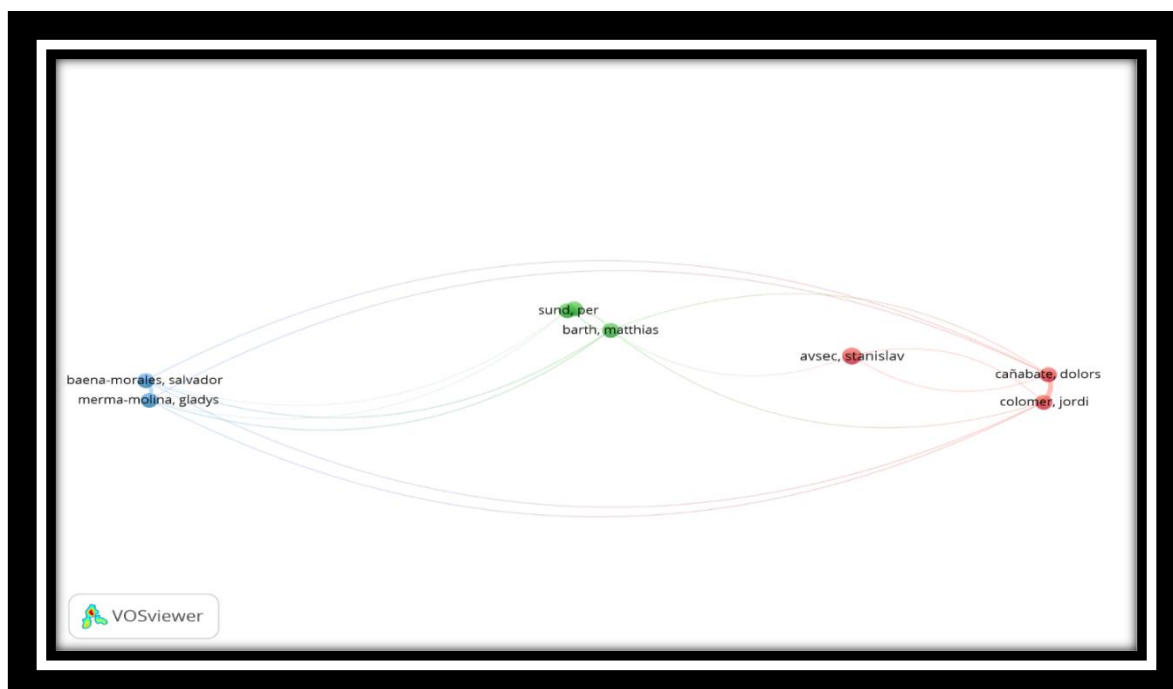
Figure 5: Bibliographic Coupling and Document



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

From the below figure of bibliographic coupling and authors its can be viewed that all four prominent authors are interlinked with each other meaning they are citing each other's study in their references.

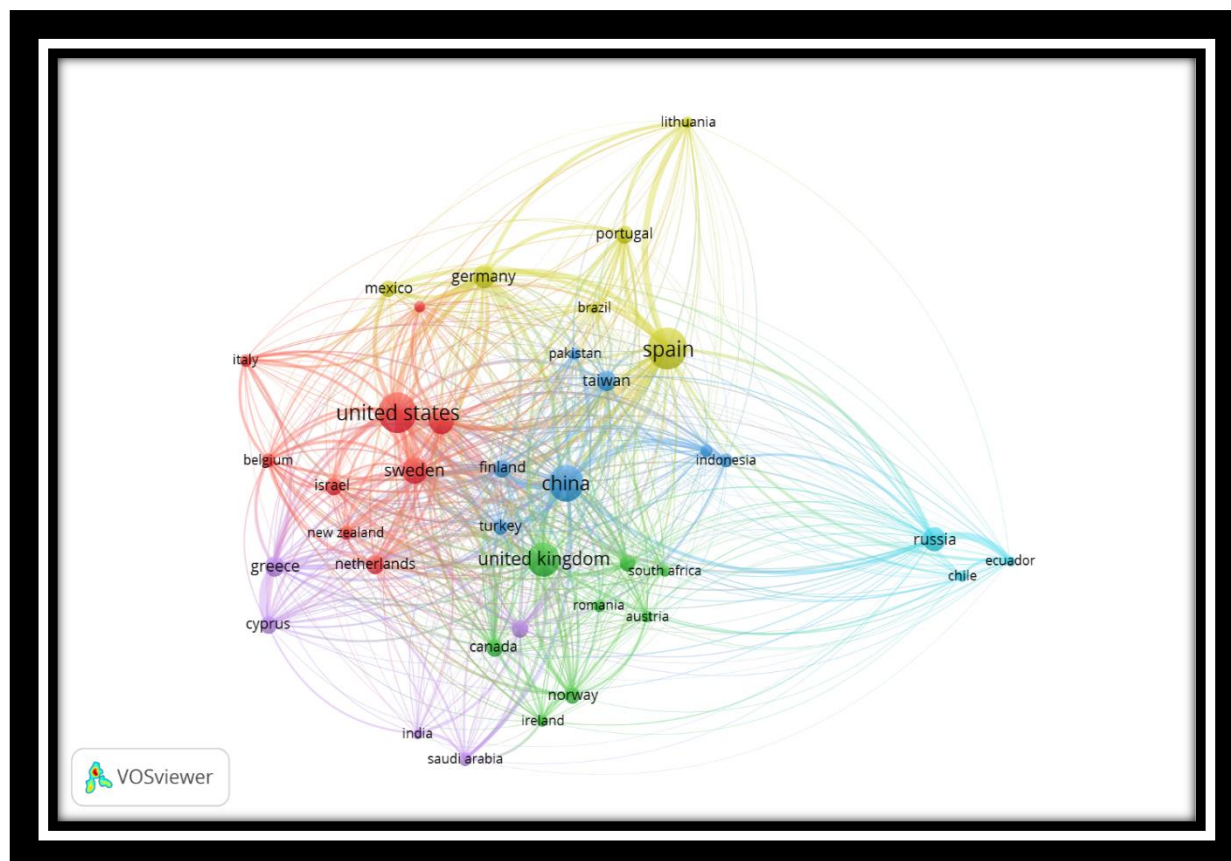
Figure 6: Bibliographic Coupling and Authors



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

From the above figure it can be realized that authors in the red, green, and blue colour clusters share the same school of thoughts and hence research in this field is skewed.

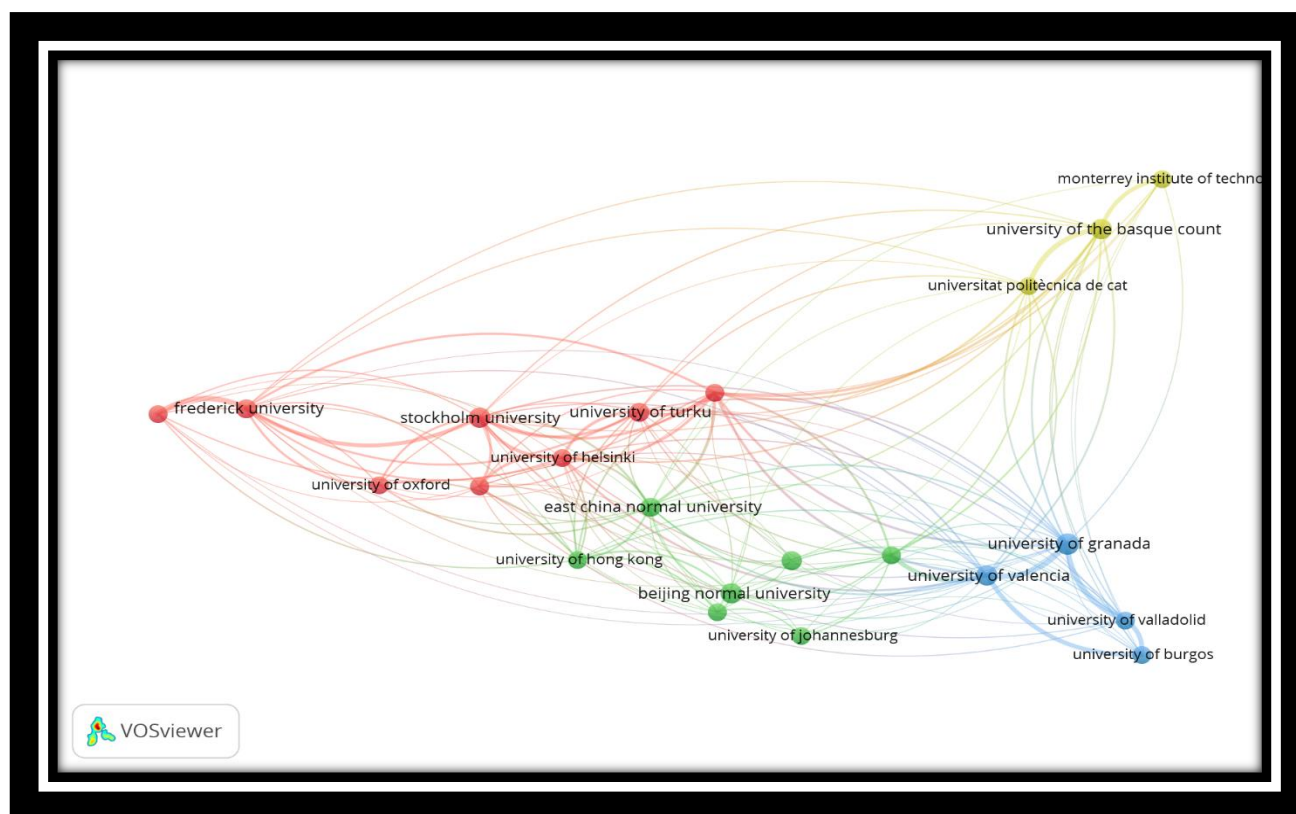
Figure 7: Bibliographic Coupling and Country



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

Bibliographic coupling with countries shows that research work in the given area originated from the country in the same cluster shows that they cite each other frequently. From the above figure, it can be viewed a dense cluster of United States, Spain, China, and United Kingdom. Authors from these countries have prominent research and their research work is cited by other authors of these four countries as well as other countries. Countries like Sweden, Germany, Greece, Taiwan has a good amount of research than India.

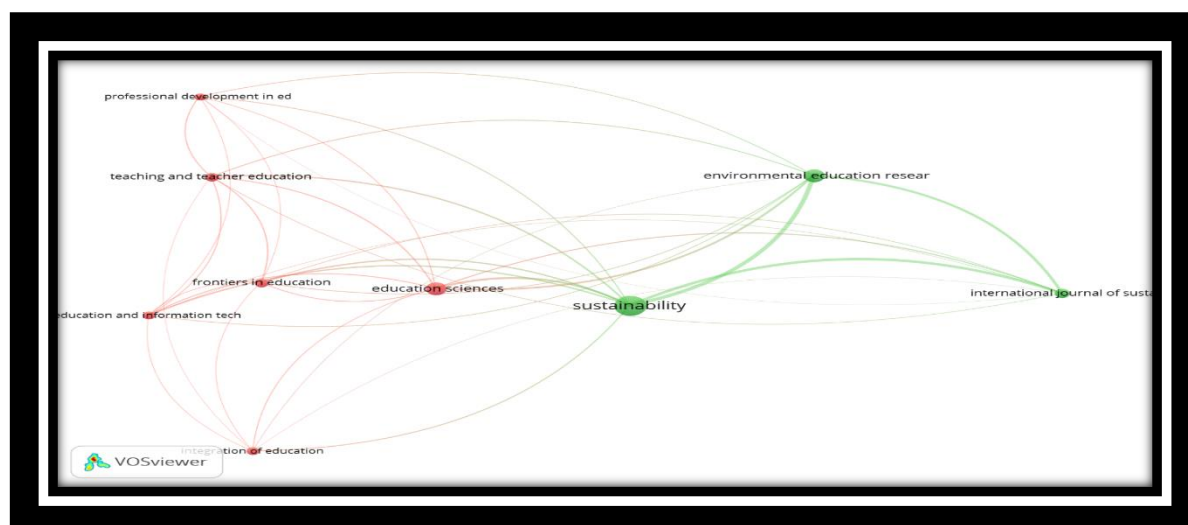
Figure 8: Bibliographic Coupling and Organization



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

By examining bibliographic coupling with an organization, it can be revealed that no single organization or university has a prominent role in the given field of study i.e. sustainable practices in a higher education. Organizations like University of Turku, Stockholm University, University of Granada, University of Basque Country, and many others have almost same contribution. This also reflects the dearth of research and so sustainable practices by the higher education institutions.

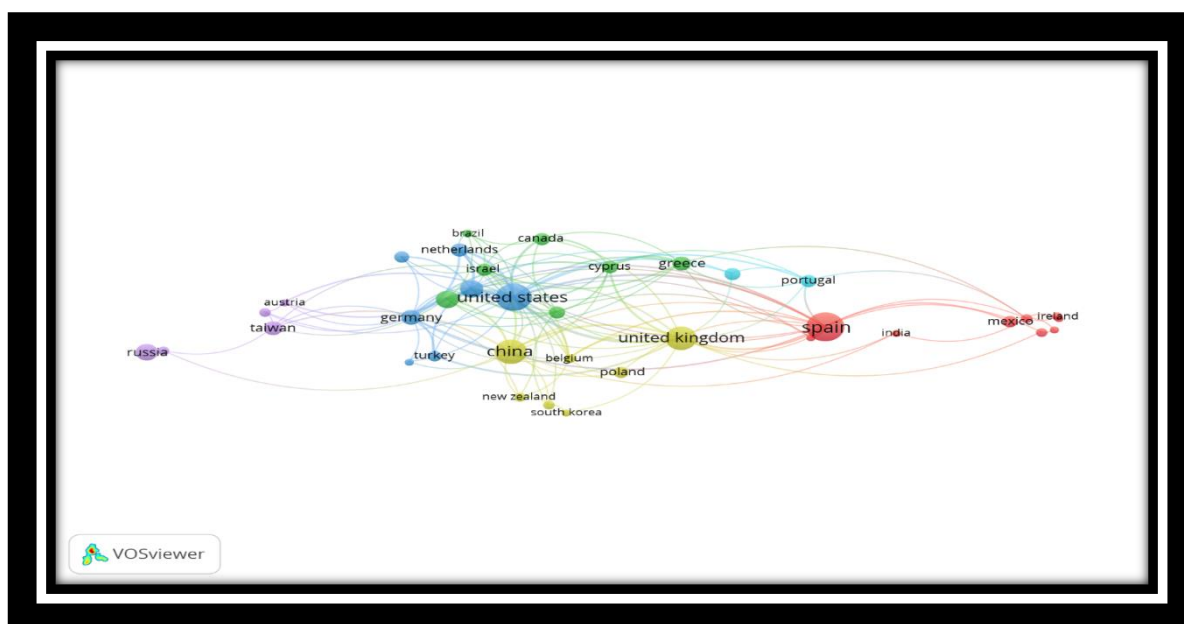
Figure 9: Bibliographic Coupling and Source



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

As shown in the search string different key words were used such as Green Practices, Environmental Practices, Ecological Balance, Sustainable Approach, Sustainable Practices etc to collect the knowledge base of Sustainability in higher education institutes, university systems etc. Figure 6 shows majority of the research are published with the name “Sustainability” present in it. A green colour large cluster can be seen in the figure. The given research also shows that the above-mentioned research is published with various related terms and in many related sources to sustainability such as environmental education research, carbon and education, education science, frontier education and many others.

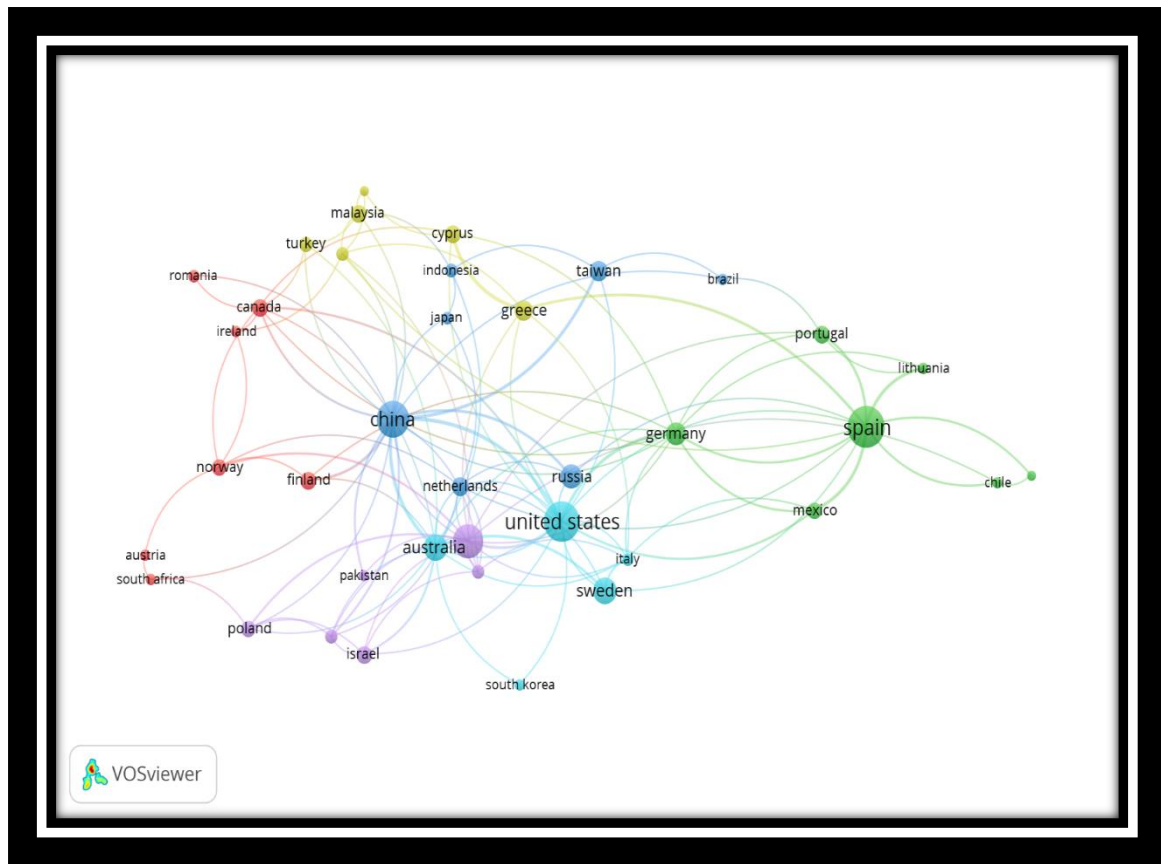
Figure 10: Citation and Country



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

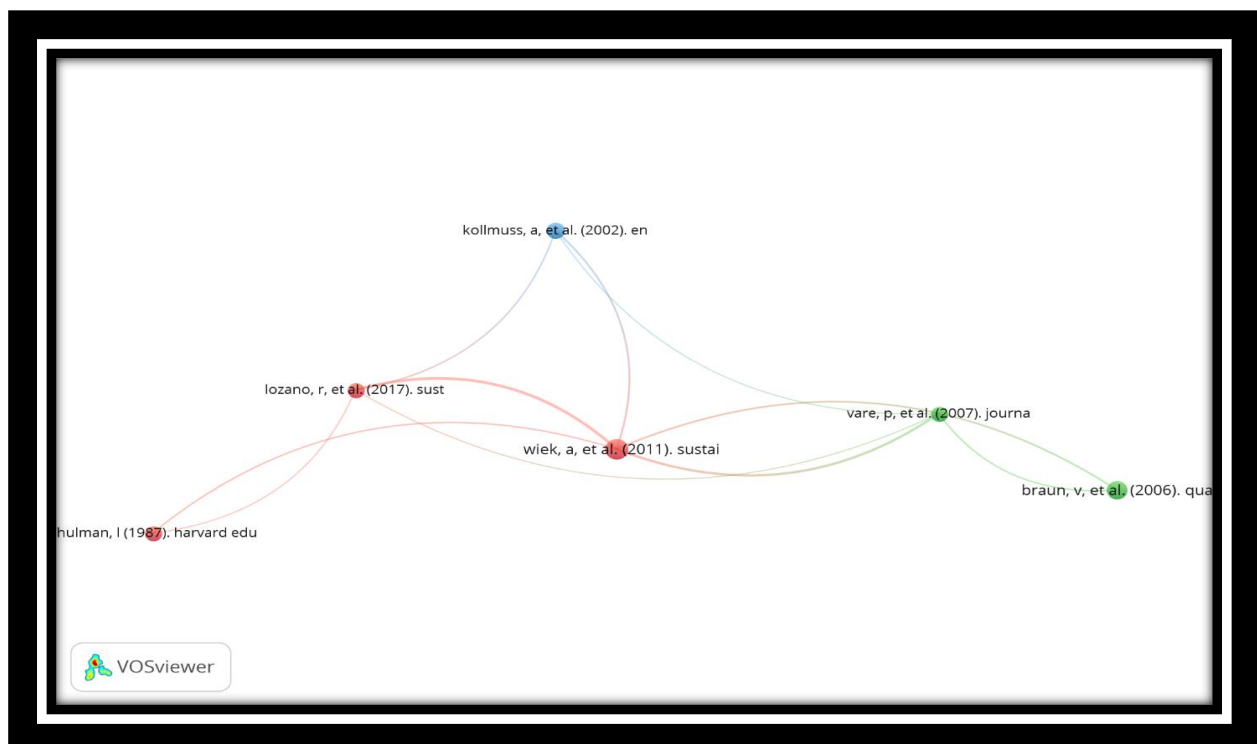
From the above figure it can be revealed that Spain has a highest number of citation, and a distinct red colour is formed which is away from cluster formed by documents in United States, China and United Kingdom. Countries like Russia, Taiwan, Canada, Israel, Cyprus, Poland, Ireland, and others are also having significant documents and shows noteworthy contribution in the given field of sustainability practices and higher education institutions. The results obtained in this figure can be reinforced by the results of bibliographic coupling and country.

Figure 11: Co-Authorship and Country



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

Figure 12: Co-citation and cited references



(Source: Based on data collected from Dimensions and analysed using VOS viewer)

Although the dimension database has covered the scholars and their research from all parts of the world; there is noticeable geographical pattern in this data base. Almost majority of the studies are conducted in only limited part of the world mainly US, UK, Germany, Australia, Israel, Russia, and others.

Developing economies need to bring awareness for the sustainability and imbibe in their curriculum.

Limitations

Even though an attempt was made to get and analyse exhaustive data for a wide period range of 1989 to 2023, this study is not free from limitation and scope for the future research. All possible steps were followed in data cleaning and extraction. The study retrieved data from Dimensions and attempted to extract only research studies with more than ten citations from the Dimension data base. Although every effort was made to reduce errors in data cleaning, errors in the source may have influenced the analysis and outcome. (Devarakonda and Pandya, 2023)

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Relevance of ESG in Investment Decision Making in India: A Financial Advisors' Approach

Dr. Agnya Patel*

ABSTRACT

ESG (Environmental, Social, and Governance) investing is becoming increasingly important for investors around the world. The relevance of ESG investing is rooted in the fact that it seeks to align investors' values and beliefs with their financial goals. ESG considers the sustainable return, risk reduction, and accountability aspects of investments. The study about seeks to understand the relevance of ESG Investment in India and to analyse the various aspects related with ESG linked investments in India. This paper studies the preferences of financial advisors for ESG issues and the influence of ESG issues on their investment decision-making. Based on the analysis from the research, conclusions were drawn that financial advisors value ESG issues in their investment decision to a certain extent but in India it is in an initial or beginning phase which needs much more attention for development. The findings of the study can help recognize the demand for ESG issues and adoption and implementation of ESG rules and regulations will eventually improve the overall ESG practices of the nation, and will consequently help to preserve ecological and social balance.

Keywords: ESG, Green Investing, Impact Investing, Sustainability

INTRODUCTION

According to Goyal & Aggarwal (2014), in the past few years socially responsible investing, environmental, social and governance investing has gained a momentum among the Institutional and Retail investors in India. ESG Investing is a holistic investment approach, which involves incorporating ESG factors into the investment analysis process and decision-making. It is referred to by many names such as socially responsible investing (SRI), ethical investing, sustainable investing, triple bottom-line investing and green investing and has multiple definitions/ interpretations. In ESG investing, investors would invest in companies that are socially and environmentally responsible (Shah, 2018). ESG investing also suggests that investors would withdraw their investments from such companies that do not behave in an ESG friendly manner. Such investors have an investment strategy which considers both financial viability and social/environmental sustainability thereby achieving their twin objectives of financial return and positive social/environmental impact.

ESG (Environmental, Social, and Governance) investing is a type of investment strategy that seeks to invest in companies that prioritize environmental sustainability, social responsibility, and strong corporate governance practices. ESG investing takes into account non-financial factors such as a company's impact on the environment, its relationships with employees and communities, and the quality of its management

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and leadership. Environmental factors may include a company's energy efficiency, use of renewable energy sources, and policies on waste and pollution. Social factors may include labour practices, human rights, community engagement, and product safety. Governance factors may include board diversity, executive compensation, and shareholder rights. ESG investing can take different forms, including negative screening, positive screening, and active engagement. Negative screening involves avoiding investments in companies that engage in activities that are deemed harmful to the environment or society, such as tobacco or weapons manufacturing. Positive screening involves actively seeking out companies that have strong ESG practices and investing in them. Active engagement involves using shareholder rights to influence a company's behavior and encourage it to adopt more sustainable practices. ESG investing has become increasingly popular in recent years as investors recognize the potential for companies with strong ESG practices to outperform their peers in the long run.

NEED FOR ESG INTEGRATION IN INVESTMENT DECISION MAKING

ESG (environmental, social, and governance) integration in investment decision-making refers to the incorporation of ESG factors into the investment analysis and decision-making process. The importance of ESG integration in investment decision-making has been increasingly recognized in recent years, for several reasons. Firstly, ESG integration can help investors identify risks and opportunities that may not be captured by traditional financial analysis. ESG factors such as climate change, social issues, and governance practices can have a significant impact on a company's long-term financial performance. By analyzing and incorporating these factors into investment analysis, investors can gain a more comprehensive view of a company's performance and prospects. Secondly, ESG integration can help investors better manage risks. ESG factors can pose significant risks to companies, including regulatory and legal risks, reputational risks, and operational risks. By incorporating these factors into investment analysis, investors can identify and manage these risks more effectively. Thirdly, ESG integration can help investors align their investments with their values and objectives. Many investors are interested in investing in companies that are aligned with their values and beliefs, such as those that are environmentally sustainable or socially responsible. ESG integration enables investors to identify and invest in companies that are aligned with their values and objectives. Finally, ESG integration can contribute to better long-term investment performance. Studies suggest that companies with strong ESG performance tend to outperform their peers financially, both in terms of stock returns and accounting measures such as return on assets and return on equity. By investing in companies with strong ESG performance, investors can potentially achieve better long-term investment performance. Overall, the importance of ESG integration in investment decision-making lies in its ability to provide a more comprehensive view of a company's performance and prospects, identify and manage risks, align investments with values and objectives, and potentially contribute to better long-term investment performance.

In order to track, monitor, assess and report ESG performance of companies, there are various indices:

- S&P BSE Greenex: Tracks the performance of the top 25 companies in terms of greenhouse gas emissions, market capitalization and liquidity.
- S&P BSE Carbonex: Tracks the performance of the S&P BSE 100 companies based on their commitments to combating risks arising from climate change. It combines non-financial risks, those arising from climate change along with financial risk to provide an integrated measure.
- S&P BSE 100 ESG Index: Tracks companies that follow a defined sustainability criterion with similar risk and return profiles of S&P BSE 100 companies. It has 69 constituent companies and has a proven track record of providing financial returns and outperforming the benchmark.

- NIFTY 100 ESG Index: reflects the performance of companies in the NIFTY 100 Index based on an ESG score.
- NIFTY 100 Enhanced ESG Index: It is an advanced index which is similar in characteristics to NIFTY 100 ESG Index, except there is an additional parameter in consideration. The companies should have a normalized ESG score of at least 50% to be part of the index.

LITERATURE REVIEW

In the last two decades the effect of ESG has been an important research topic. In many studies the central question was whether or not ESG affects the value of a firm. Despite all these studies a consensus about the relation between ESG and firm value is not agreed upon. As a consequence, theories describing the relationship between ESG and corporate financial performance show a wide variety.

According to the traditional neoclassical approach, investing in socially responsible aspects creates additional costs for a firm (Palmer, Oates and Portey 1995). In a competitive market additional costs reduce the profits of a company (Baumol 1991). On the other hand, different theories state that an active CSR policy could also create additional benefits for a firm. For instance, Godfrey, Merrill and Hansen (2009) argue that investing in environmental, social and governance can be seen as an 'insurance' against reputation risks. According to McWilliams and Siegel (2006) a positive reputation has positive economic value. They argue that consumers consider products of companies with a positive reputation as high quality. Another implication of a good reputation is that it enhances the commitment of stakeholders (Godfrey 2005; Wang, Choi and Li 2008). Suppliers and partners are more likely to act in favor of the firm. Rindova and Fombrun (1991) find that this enhanced support from stakeholders can lead to an increase of capital and creates more willingness to provide resources to a firm. A positive reputation enhances employee satisfaction and the willingness to work for the company and to work for a longer time for the same firm. Edams (2011) finds that employee satisfaction affects the corporate financial performance in a positive way.

Several prior studies have documented the relationship between environmental aspects and investment decision-making processes, for example in the USA, Japan, India, France, and Australia. Investors in the USA expressed that the evaluation of environmental issues helps them judge a companies' socially responsible behavior (Berry, T.C.; Junkus, J.C, 2013). In addition, environmental issues are the most influential element of Indian investors to achieve non economic investment goals (Sreekumar Nair, A.; Ladha, R, 2014). And Innovest (2004) had carried out a meta-analysis of 60 studies to assess the relationship between environmental governance and financial performance. Friede et al. (2005) find that the majority of studies indicates a positive relationship between ESG and corporate financial performance. Although the majority is positive, the varieties of relationships found in recent studies indicate that the relationship between ESG and corporate financial performance is not consistent. Many circumstances and factors are possible related to this relationship and do affect it either positive or negative. Despite the amount of recent studies the factors and circumstances that affect this relationship are still not clear. The lack of consensus next to the unknown moderating factors makes it hard to expect the effect of ESG on corporate financial performance. Based on the empirical work of Edams (2011), which finds evidence for the existing difficulties, to price intangibles for large companies, the expectation is that for small firms with less public available information a positive relation will be found.

On the other hand, Angel and Rivoli (1997) predict that a socially controversial stock that investors shun has a higher expected return, and that the expected return increases with the proportion of socially responsible investors in the market. According to Koehler & Hespenheide (2012), poor corporate strategy, differences in corporate culture and business legislations pose a severe threat. Other social issues such as labor management, human capital development, health, safety are some of the social factors which might hamper a company's reputation if not properly dealt with. These ESG factors can influence a company's financial performance through direct operations risk (accidents, environmental pollution, social factors and the like), supply chain risk (child labor, natural resource use, weather catastrophes) and product risk. Getzner and Grabner Krauter (2001) investigate the willingness of consumers to invest in "green shares". Computer aided telephone interview with 400 consumers. Expected profit, environmental awareness, education and income were explanatory variables of consumer willingness to invest in "green shares". While Tripathi and Bhandari (2012) in their paper empirically examined the performance of Green stocks portfolios vis-a-vis market portfolio from 2000-2012 using absolute and relative performance measures. The study finds that the green is good for the India stock market as it outperformed the market and other stocks portfolios on various occasions. As per other studies, Mahapatra (1984) empirically investigated investor's reaction to the pollution control expenditure and the accounting of corporate social responsibility performance. The study finds that the pollution control expenditure has a negative impact on the financial performance of US companies in 1970, while Dunn (2009) in his study investigated the impact of ESG issues with respect to their role in investment decisions. The study finds that decreased costs through removal of environmental inefficiencies may lead to increased firms earnings and higher returns.

Overall, research on ESG investing suggests that ESG factors are becoming increasingly important to investors, can contribute to better long-term investment performance, and can help investors manage risks. However, there are also challenges and limitations to ESG investing, including the lack of standardization in ESG data and ratings and the challenges of integrating ESG factors into certain asset classes and investment strategies.

OBJECTIVES OF THE STUDY

- To understand the relevance of ESG investment for investors in India.
- To study the perception of financial advisors regarding ESG investment.

RESEARCH DESIGN METHOD

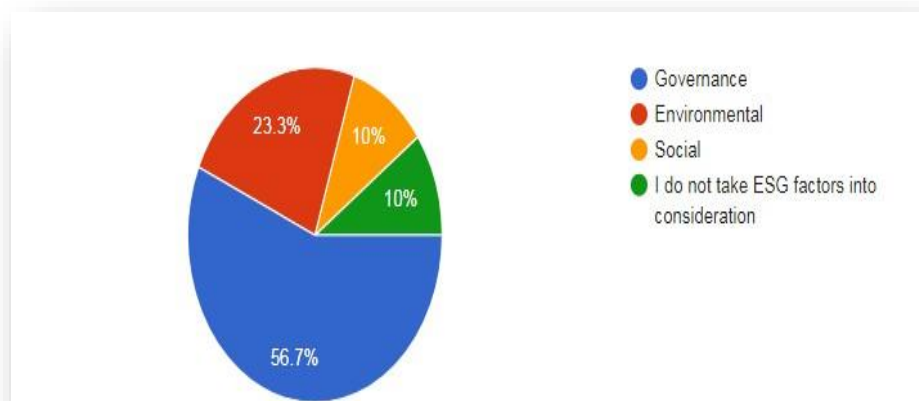
This is a descriptive research study. The primary data is collected through structured questionnaires. The Secondary data is collected through various sources like journals, government reports, books, magazines, various websites etc.

SAMPLING METHODOLOGY

The sampling technique is the Convenience Sampling Method under the Non-Probability Sampling Method. The sample size for the study is 30 financial advisors.

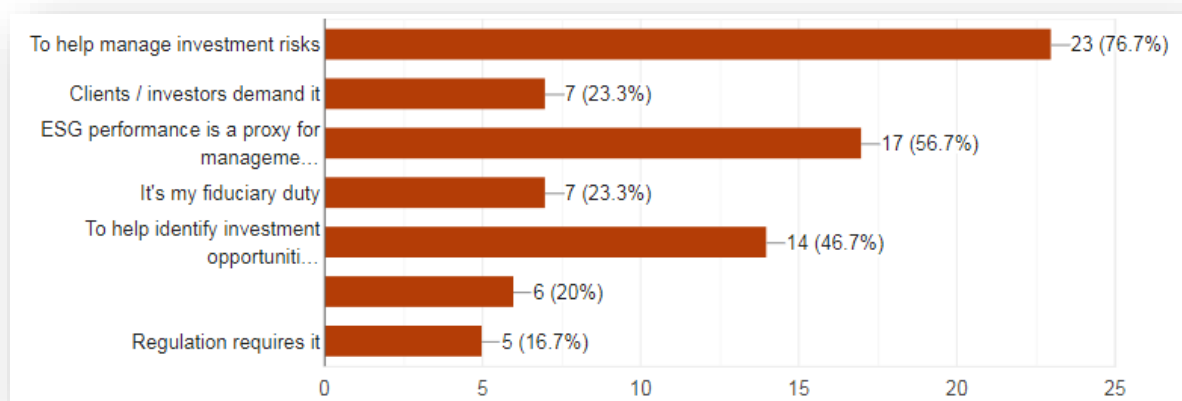
DATA ANALYSIS

Consideration of ESG (Environmental, Social, Governance) in investment decision



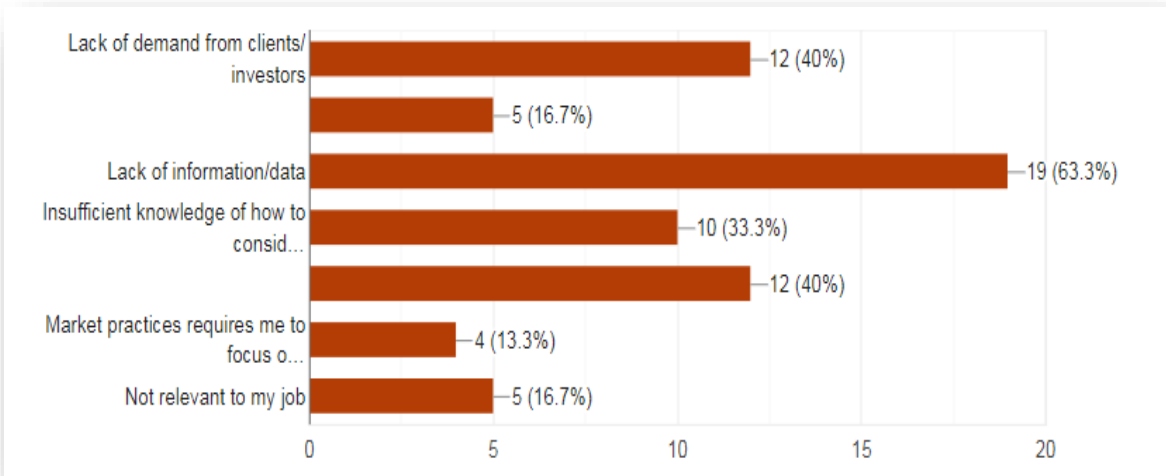
Among the total respondents, most of them emphasis on Governance issues for their investment analysis and which is followed by Environmental and Social issues. 3 respondents do not prefer any ESG factors in their investment decision making.

Reason for considering ESG in investment analysis / decisions

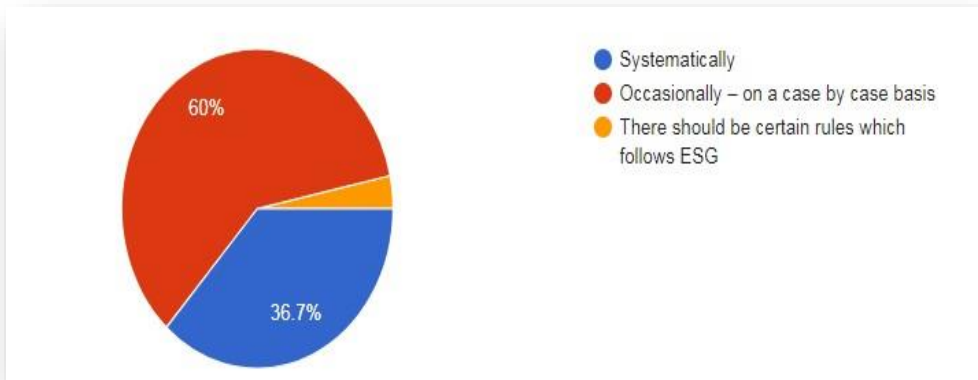


Most of the respondents take ESG issues into consideration to help manage investment risks, ESG performance is a proxy for management quality and to help identify investment opportunities. There are very few who believes that regulation requires it.

Reasons for not considering ESG in all investment analysis/decisions



Majority advisor don't take ESG issues into their investment decision because of lack of information, lack

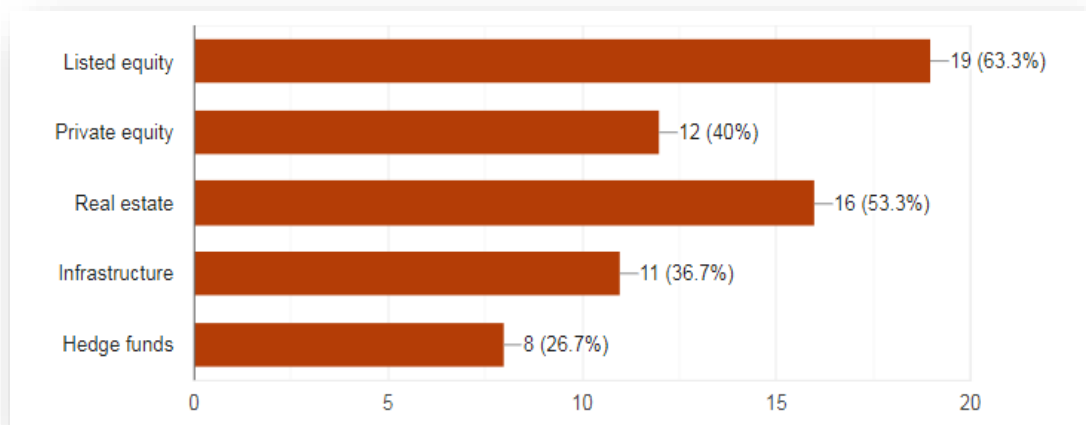


of demand from clients, inability to integrate ESG info in their quantitative models and because of insufficient knowledge on how to consider ESG issues.

Frequency of considering ESG in investment analysis

Most of the respondents consider ESG issues occasionally within their investment analysis. And around 11 respondents consider it systematically while one prefers that there should be certain rules which follows ESG.

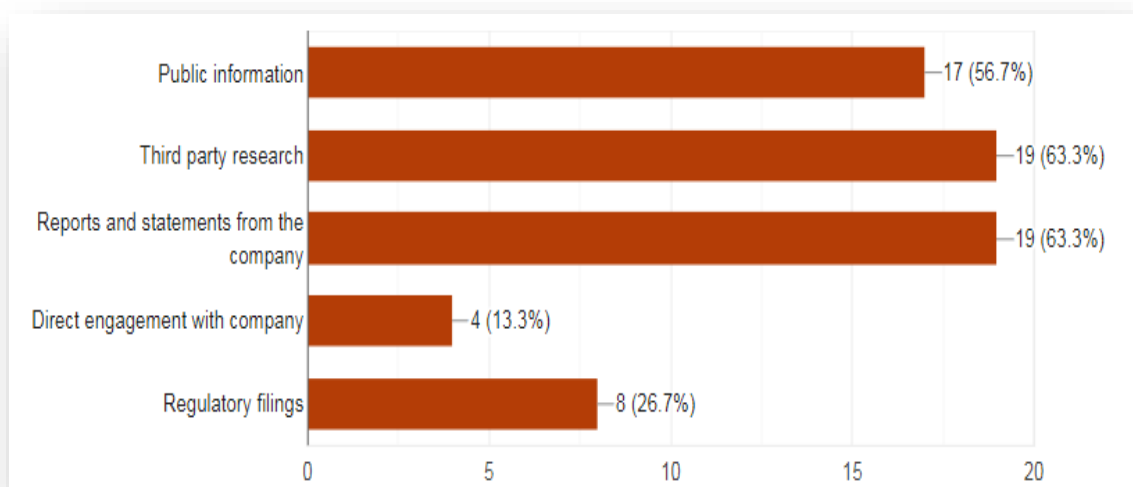
Asset classes for integration of ESG analysis



Among all the respondents majority of them integrate ESG analysis for listed equity which was followed by real estate and private equity and then infrastructure. Very few people are inclined towards hedge fund

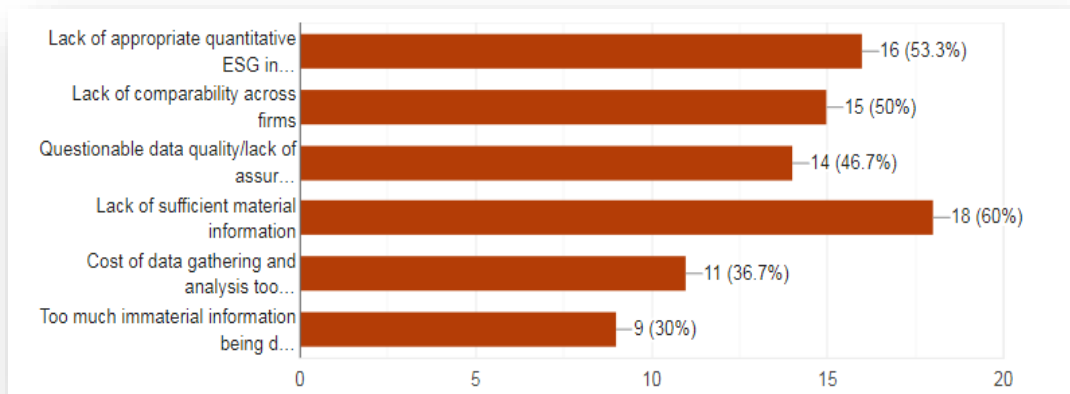
Source of ESG information

Most of the respondents get ESG information through third party research, reports and statements from the



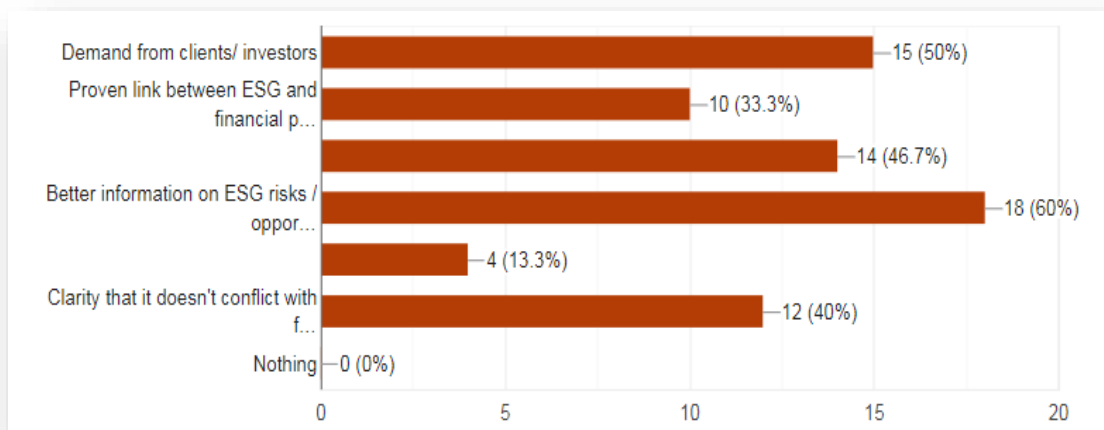
company and through public information. Here regulatory filings and companies provide very little information to them.

Factors that limit the ability to use non financial information in your investment decisions



Most of every factor is limiting the ability of the respondent to use non financial information in their investment decision. Out of which lack of quantitative and material ESG information plays a vital role.

Reasons one would begin considering ESG issues in your investment analysis / decisions



If the advisors are provided with better information on ESG risks / opportunities and if there would be demand from clients, then the respondents might begin to consider ESG issues in their investment analysis or decisions.

FINDINGS AND CONCLUSION

With the aid of the questionnaire survey administered among the individuals, this study aimed to examine the ESG preferences and the ESG investment market in India. Here it is found that if the investors are provided with better information on ESG risks / opportunities and if there would be demand from clients, then the advisors might begin to consider ESG issues in their investment analysis or decisions. Accessing

the ESG compliance data continues to be fairly challenging and hence, the asset managers are forced to use the secondary data available off the self on these parameters for their investible universe. Third party research, reports and statements from the company and public information plays a vital role in getting ESG information. From a risk perspective, traditional investments that ignore ESG factors miss capturing information beyond financial statements that indicate higher risk exposure. And from a returns perspective, where investor interest rewards companies with good ESG scores, motivating other companies toward good corporate citizenship. Due to the cost of compiling and analyzing data, most company-level ESG information doesn't end up in the hands of advisors or individual investors. Among all the respondents, majority of them integrate ESG analysis for listed equity which was followed by real estate and private equity and then infrastructure. Very few people are inclined towards hedge funds.

The investors in India are yet to evolve to the level of awareness about ESG practices so as to pay for additional costs of generating ESG data and these costs of primary research would be very substantial. The Financial Advisors must be able to provide clients with guidance and solutions on ESG investing. Creation of long-term risk mitigation instruments should be encouraged. Risk mitigation instruments such as credit guarantees, insurance and forex hedging products can help accelerate the flow of private capital in newer 'green' sectors. Stock exchanges should support listing of green companies through relaxed listing norms and incentives like lower listing fee. Creation of green index by stock exchange and it will enable passively managed funds to invest in green companies. The adoption and implementation of ESG rules and regulations will eventually improve the overall ESG practices of the nation, and will consequently help to preserve ecological and social balance. The investors will be ensured a sustainable investment return together with accountability towards the environment, society, and economic balance, which can pave the way towards sustainable development.

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A Study on Growth and Challenges of India in Sustainable Development of Industry, Infrastructure and Innovation

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ABSTRACT

Industry, Innovation and Infrastructure of a country acts as active and passive growth indicators of a nation's sustainable development. It is phenomenal that all these areas are interlinked to achieve the targets of sustainability. Sustainable development is considered to be the recent drift at a global level as it caters the needs of present retaining the capability of resources of all means to meet the needs of future. Despite of being a fast-paced economy, India is not on target to reach the sustainable development in industry, innovation and infrastructure which is crucial to challenge and achieve other goals like poverty, inequality, consumption and production, ecosystem. India currently ranks 121, which flipped down three places from 117 in 2020. In this paper, a systematic review of literature is conducted to identify the gap areas in reaching the goal targets. First a study is conducted to understand the importance of sustainable development and review present status of India. Subsequently, a study is done to identify the challenges faced, improvements and strategies adopted to attain the desired goals by 2030. In addition, the review also presents the methods and models adopted by other nations leading in the index of sustainability and also observed in the review reports of various studies

Keywords: Sustainable development, Industry, Innovation. Infrastructure, growth, challenges.

Introduction

Sustainability is about catering to the needs of the present and retaining the capability of resources of all means to meet the needs of the future. The concept of sustainable development is multi-disciplinary, complex, and systematic (Anon, July 27 2011 for e-ir.info) as it argues for meeting the needs and development of humankind while retaining the natural ecosystem, making the Earth's planet a home for every species. Sustainable development was first time coined in 1980 when the intent of the concept was merely basic. But the drastic shift in the climatic conditions, economic crisis in various parts of the world, technology, increased poverty and hunger made sustainable development a need of the hour.

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Therefore, sustainable development is not only a global challenge but obligatory as we all owe this planet to our future generations. Keeping in view the inevitability, sustainable development is fragmented into 17 key areas referred to as Sustainable Development Goals (SDG). The SDGs were formulated in 2015 by the United Nations General Assembly (UNGA) as part of the Post-2015 Development Agenda, which sought to create a future global development framework to succeed the Millennium Development Goals,



which ended that year. They were formally articulated and adopted in a UNGA resolution called the 2030 Agenda. On 6 July 2017, the SDGs were made more actionable by a UNGA resolution that identifies specific targets for each goal and provides indicators to measure progress. Most targets are to be achieved by 2030, while some have no end date. The goals proposed are based on decades of work done with the participation of countries and the UN including the UN Department of Economic and Social Affairs (UNDESA). Consequently, in September 2015, 17 goals are shaped with a plan of adopting all by 2030 which is termed the 2030 Agenda for Sustainable Development which are:

SDG 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE:

Sustainable Development Goal 9 pursues to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. This SDG includes three important aspects of sustainable development: infrastructure, industrialization and innovation. Industry, Innovation and Infrastructure of a country act as active and passive growth indicators of a nation's sustainable development. Each area contributes in its own way to achieve the goal of sustainable growth of the economy. It is phenomenal that all these areas are interlinked to achieve the targets of sustainability. A resilient infrastructure facilitates the growth of new industrial setups, contemporary innovation enables to the creation of modern and sustainable infrastructure and industries. This eventually leads to create new

employment opportunities challenging poverty and imbalanced development, building modern cities and improving the quality of living of citizens. Though development is of utmost importance, achieving the targets of development by retaining the capacity of the environment, economic and human resources is of high priority.

Review of Literature:

Sudipta Mondal et.al (2021) conclude that there should be a significant improvement in the index scores in northern states and establishes the fact that states should emphasize innovation and infrastructure development to accelerate industrial growth. Sumana Chatterjee (2021) Policies should be made at both center and state level after evaluating the ground realities. Also, the best practices from the model-performing countries can be analyzed and shared and adapted for better results in the achievement of the various sustainable development goals. The growth index rate presented and various facts presented in the paper in the paper are collected from the official websites of the UN, NITI Ayog, and SDG index and VRN report.

OBJECTIVE OF THE STUDY:

The study in this paper focuses on India's challenges in achieving the target index in the selected area and to identify the gap areas.

RESEARCH METHODOLOGY:

The data, facts and figures used for the review are purely secondary. As the study area is vast, complex and bases on the statistical figures published by the organized and controlling bodies, there is no scope of collecting the primary data. Since an attempt is made to understand the importance and analyze current status and the challenges faced. No statistical tools are applied in the study.

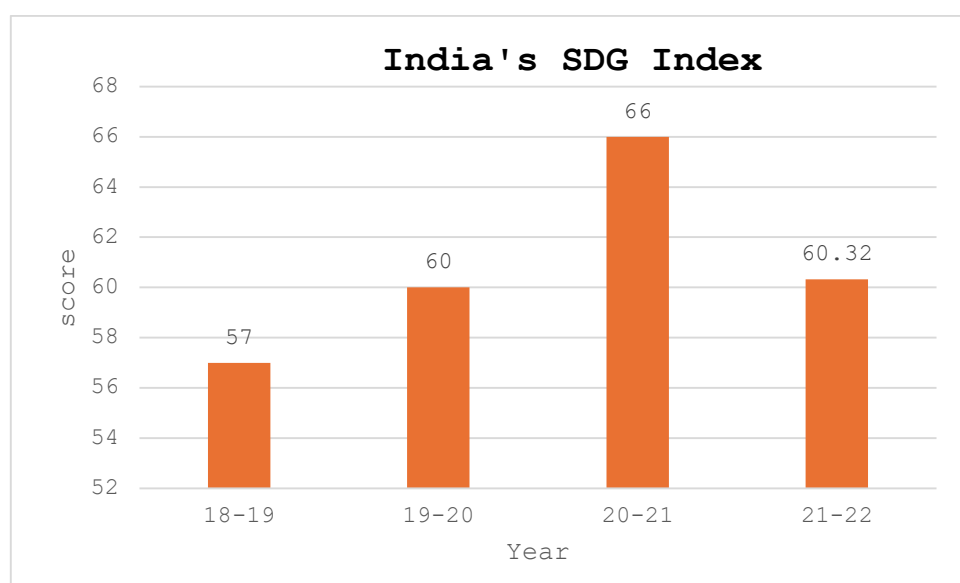
Analysis:

To identify the key challenges and gap areas in achieving the target, it is important to study the growth process. In the analysis the overall performance of India in achieving the SDGs is highlighted, followed by the focus on SDG 9; Industry, Innovation and Infrastructure which is fragmented into 8 Targets and

12 Indicators. Targets specify the goals and Indicators represent the metrics by which the world aims to track whether these Targets are achieved.

India's progress in achieving SDG:

India has progressed on the fulfillment of **Sustainable Development Goals(SDGs)** through improvement in score of **NITI Aayog SDG India Index & Dashboard** to **66** in 2020-21 from 60 in 2019-20 and 57 in 2018-19. India presently ranks 121 among 193 member countries of the UN and scores 60.32. And among South Asian countries India occupies fourth place from below- sourced from [Sustainable Development Report 2022 \(sdgindex.org\)](https://sdgindex.org/).



Conclusion: The above study is done based on the data provided by UNDESA, Niti Ayog, SDG index dashboard and other articles available. The study focused on identifying the growth progress, challenges faced by India, and improvements planned by India. After conducting the study it is found that lack of inclusion in rural areas, intense population, complex demographic properties, unawareness, fiscal deficit, and allocation of finances to improve innovation and research capability are the pitfalls for the growth process. A systematic approach of implementing the planned improvements is needed.

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Tea Tycoon of Nellore

The Tale of local Tea Magnate

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Abstract

An entrepreneur appears as a hero in the drama of economic development. Entrepreneurs play an important role in economic growth and the development process through wealth-creation and employment-generation. This is a case study on Entrepreneurship and demonstrates leadership qualities in MSME's. The enterprise is situated in tier 3 city called Nellore in Andhra Pradesh. It revolves around an established enthusiastic and entrepreneurial Nellore business man. Mohammed Akhil the proprietor of the Sikandar tea. This paper addresses the environment, the challenges, barriers entrepreneur face in their paths. The case may inspire others especially the young and students to take up entrepreneurship as career option.

Keywords : Entrepreneurship, Entrepreneurial Leaders, Innovation, Sustainability, Inspiration

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1.0 Introduction

A country's prosperity or wealth and its progress relies upon how competitive are its organizations, be it government or non-government. In turn, the dynamism and the competitiveness rely basically on the core competencies of its entrepreneurs. Thus, the fact of entrepreneurship has become not only a stimulating force for the growth of the economy but also an important element of the economy. It refers to the broad course of activity taken up by proprietor or owner of business in beginning, establishing and overseeing all the operations of the industrial unit with a profit motive. An activity of managing an enterprise for profit and growth has been explained as an entrepreneurship (Goel et al., 2007). The most important part of entrepreneurship is not only economic improvement alone but it is more than just increasing per capita yield and salary; it includes starting and bringing transformation in the structure of business and society. These changes are usually followed by progress and expanded yield, which brings more income to be shared by all the participants (Robert and Michael, 2002). An economy is the final result for which entrepreneurship is the reason (Mehta, 2013, GEM, 2014). It is a crucial condition for economic improvement; the second one is the expanded yield of capital (Parson and Smelser, 1956). Entrepreneur is an important input in prosperity of the country or of a region within the country (Vasant, 2011). It plays crucial part in wealth-creation and also in employment-generation (NKC, 2008). It plants the seeds of development and helps in the growth.

2.0 Review of Literature

Karim, Shaik (2022) has explore the story of Divya Reddyvari- A classic case of a Village girl to a Business Women. The case tells about the struggle and challenges faced by Divya who hails from Nelapallivillage of Palamner Mandal in Chittoor District of Andhra Pradesh, which does not have the basic facilities started her own business and brought fame to her parents and her village.

Shabana A. Memon(2016) illustrated in her paper about student entrepreneurs from Bharati Vidyapeeth . The paper addresses the environment, the challenges which segregated them as need based and opportunity based entrepreneurs. Each case highlights the typical characteristics of the student entrepreneur who have faced barriers while charting their paths.

Chye Koh (1996) explored psychological attributes of those individuals who are inclined to becoming a business owner or an entrepreneur and found that the achievement's need, locus of the tendency in taking the risk, toleration for uncertainty, confidence of an individual and the factor of being innovative had significant influence on entrepreneurial inclination.

Robert and Mikhail (2001) examined ethical attitudes and standards of entrepreneurs in the US as well as in the other parts of the world. The results of study revealed that entrepreneurs in the countries of US and Russia were different with respect to their ethical codes and attitudes.

Bester et al. (2003) investigated to find if there is any association among the variables; attitudes of entrepreneurship, biographical, characteristic and work aspects. The study found that there is a significant association between attitudes and characteristic variables.

Luiz and Mariotti (2011) examined the qualities of entrepreneurship within a group of young South African adults to analyze the influence of cultural, demographic, institutional and socio-economic aspects on attitudes of entrepreneurship.

Mungai and Ogot (2012) conducted an empirical study on factors related to culture influence on involvement from the perspective of gender in entrepreneurial career within the country of Kenya.

Leong (2008) surveyed to find out on essential causes that propel the intentions to become an entrepreneur in a Malaysia University that offers open education. As per the outcomes of the research study certain students indicated entrepreneurship as a desirable aspect.

Crant (1996) highlighted that gender; educational level and parents who own businesses contribute towards influencing entrepreneurial attitudes.

According to **Toledano & Urbano, (2008)** entrepreneurship education could promote entrepreneurial attitudes and mindsets through focusing on informal institutions such as role models.

World Economic Forum, Switzerland (2009) Report of The Global Education Initiative says that Entrepreneurship and Education are two extraordinary opportunities that need to be leveraged and are

3.0 Research Methodology

The researchers identified enthusiastic and entrepreneurial Nellore business man. Mohammed Akhil the proprietor of the Sikandar tea stall franchise who took reigns from his father MD. Abdul Rehman who was initially a hotel chef started off with a single tea store in Nellore at Mulapeta. Interview and observation method were used for the case writing, wherein personal visits to the work places were done. Similarly desk research has also been adopted to compile and review the literature of the past studies. The relevant literature published and accessed online through websites was also considered.

4.0 The Entrepreneurial journey:

The case in review revolves around an established enthusiastic and entrepreneurial Nellore business man. Mohammed Akhil the proprietor of the Sikandar tea stall franchise took reins from his father MD. Abdul Rehman who was initially a hotel chef started off with a single tea store in Nellore at Mulapeta.

Although the beginning was humble soon began to grow into a hot pursuit in entrepreneurial excellence Mr Mohammed Akhil was a very staunch and ethical businessman although it was very common in the beverage industry especially the tea industry to have cigarette served along side the beverage he did not compromise on his moral compass and went on with the tea Store without the tobacco products this initiative which might have been a deterrent in many a business, it did not affect the meteoric rise of the Sikandar tea franchise and led the company to its current heights

In 1980s Sikandar started with a minimum capital and they developed the company inch by inch in such a way that it rules the entire tea market in the town. Being a law graduate Mr. Akhil.MD struggled a lot in establishing the company. Mr. Akhil had been very enthusiastic and idealistic young man throughout his career and which aided the successful establishment of the highly liquid and renowned tea franchise.

The pioneering step was the introduction of the franchise model for tea which rattled the various competitors in the market and made the entrepreneur confident about this untested yet innovative model. His capability in sustaining in the market was an extreme achievement for Mr. MD akhil and thus he was able to grab the eyes of big established tea magnates even by using traditional and ethical means of commerce.

The product market fit of the tea to the Indian palate was such that it ensured the longevity over the past 4 decades. He maintained the pricing strategies within the market in such a way that he kept on increasing the customer retention year on year.

4.1 Background of Entrepreneur

Akhil.MD belonged to an ordinary nuclear family in which his father was exponentially supportive in his entrepreneurial venture, and Mr. Akhil also developed an interest in studying law. He has completed his B.L from V.R Institute of law college and still maintained excellence in developing his tea stall. He tried to utilise his whole time in learning new strategies and thinking about the enhancement of his career and promoting the company. He had faced many challenges in establishing the entity with a lion's heart and reached the stature which justified his business excellence and that which is visible through the entity which he has now built.

Initially, the tea stall was opened in the year of 1978 where his father started a basic tea stall with a minimum capital as a side business. In the year of 1980, Mr. Akhil. MD took the reins of the business by giving the

name SIKANDER to it. The way he ruled the tea business in the town justified the name.

His brothers Aslam and Fazal were not much educated and started contributing to the business upto their extent. They were entitled for managing two of the franchised at Fish market and Stone house Peta. Even though his brothers contribution was minimal the proprietor did not lose his anxiety in the business. Mr. Akhil MD was a skilled person where he learned most of his life lessons from the mistakes that he had committed by his experiments in the business. There was no one to rescue him during his difficult times and that is why he was absolutely clear in each and every step of his life. This is the time when he learnt to see his career in a Bird's eye view.

At the time of the establishment the proprietor was not enough experienced and whatever he knew was not up to the mark. He only thought of serving a tasty and flavored tea to the customers and believed that it will work as a mantra of the success which later made the customers thrive for the aroma and struck at the fragrance. Even though there were various other tea stalls in the town, his pure dedication and his intention of serving the quality entangled people to their tea stalls.

Mr. Akhil Neither a student of commerce nor a student of Finance more over he allocated most of his time in pursuing law. However he was able to manage all the financial, managerial and strategical aspects of the business may it be his hardwork or his excellence, he is able to meet the needs of the entity.

“Problems bring equal opportunities” -MD.Akhil

5.0 Strategic Development of Business

The Strategical developments of the business were initiated by the proprietor and he used each and every opportunity with utmost care and intelligence and developed the strategies that worked for the enhancement of the business. He has faced all the challenges with the business only with the suitable strategies and the right form of application.

There were many tea stalls in the town. winning the race with number of competitors is not a normal thing for a beginner. But Mr. Akhil was capturing every advantage and made optimum use of them. He made use of franchise model for the first time in the town to tackle the challenges of work force management and revenue allocations. He believed that the unique tea formula is the only way to win the customers heart and he did not even changed the price of the basic tea throughout the years. this made the entrepreneur to lead the competition and capture the interest of the customer.

He says that the major reputation for the brand is only because of the taste and the aroma of the tea and this was the Unique selling point of the tea. Most of the young entrepreneurs are not much experience and feel difficult to tackle the price fluctuations in the market due to economic crisis and inflation in the market but to overcome this, he made the basic tea available for all the customer at a nominal price and the prices ranges of the other products fluctuated according to the situations.

The entire tea company maintains a unique and even taste in every stall by equipping trained and skilled workmen in the job and the proprietor did not compromise on the taste of the tea and took special interest to match the level of expectation of the customers. Following the exact pattern every time is not a small thing, nevertheless he was able to manage the tea taste exactly the same at every stall with his unique recipe for the tea. As all the strategic developments of the business lead to not only maximize the sales but also it fueled the speed of sales in the business. The aroma of the tea lasts only for some time and management of tea sales during that time is a critical thing. As the business is running rigorously the quantity of sales increases within a short period of time. The professional workmen manage the quantity of the tea that should be sold in specific duration with experiential expertise.

The Covid Pandemic and the subsequent adjustments to the order of the day, showcased the amazing entrepreneurial ability of Mohammad Akhil. The tea business as we will further analyse was quite capital intensive at the start. It was not until at least six months at the business started to make some earnings for itself. Especially during the pandemic when the business was making no money at all for nearly two years, the proprietor and the franchise survived on the basis of debt secured from near and dear ones. This capacity to stay afloat during dire situations shows the capacity of a small business to maintain healthy relations in and its surroundings to sheer goodwill and promise a future repayment via business earnings.

Through efficient future conduction of business. This methodology Might seem alien and very distant from traditional business practices from traditional business practices but this Persistent emphasis on developing goodwill among the surroundings is what is what helped MD AMD Akhin his survival during the pandemic it's survival during the pandea close talk with the proprietor tells us that The reserves of capital were expended of capital were expended in the payment of salaries to his employees and The loans That he procured were used For the survival of self and family.

The main differentiation factor of Sikander tea stall came out to be the clearly superior taste which seemed to tower above his competition. The Sikander tea franchise had main competitors like the tea planet and other local tea vendors but their constant emphasis on quality and remarkable taste not only ensured their

survival in Mulapeta of Nellore but also formed a firm basis for future expansion.

The proprietor did not follow any special marketing strategies in the expansion rather he converted each and every customer into a marketing agent by binding him with the aura of the tea and created an unbreakable chain network that wakes up the entire town with a tranquil aroma of the tea. moreover, he said that he has never seen disappointment in the faces of the customer in the tea café the only expression he could detect is satisfaction. This played a vital role in promoting the tea business.

It is very important to notice the basic steps or could rather say precautions to be taken while establishing a new franchise. Mr. Akhil says that it is very certain to even break even in the initial stages and it bears only losses in the beginning. Every new franchise takes time to generate some yield. “A proprietor have to maintain only required amount of workforce at initial stages or until the franchise gets on track” he says. He also specifically added that there should be at least one professional workmen in every tea franchise be it a new one or old one”.

The expansion of the tea stall did not happen overnight it took years to explore and adopt the changes with the situations over the decades the one thing that remains constant throughout the journey is that the consistent hard work and unique decision making system which adopts to the required set of necessities. The transformation happened in a step by step process. The proprietor initially concentrated to move this out of that particular area and later started expanding it in more areas and it grabbed the entire town now. Now there is no area without Sikander tea stall in Nellore.

6.0 Future Vision

Sikander tea stall now aims to lure in the core competitors or aspiring entrepreneurial businessmen into expanding his own franchise. He shows them a comparative financial returns projection of setting up their own business vis-a-vis handling the Sikander tea franchise and thus establishing the better alternative. This strategy to bring forth new franchises was deduced when one of their competitors tea planet set up a stall near them but couldn't survive for longer due to the superiority of the product in hand. This superiority is meant to be furthered by the owner through elite measurements and centralised managing system of beverages offered, in this way the proprietor rightly aims to expand and lessen the burden of handling everything on his own which he has been successfully doing since the past 33 years.

7.0 Conclusion:

The case is a genuine example of how success follows hard work and strong determination. Sikandar tea success was not overnight or easy but it was gradual and full of hurdle. The case also shows how his struggle made him humble. He never forgot his roots, even today, he reminds himself of his modest past. Sikandar tea is not just a successful name but it is one among those entrepreneurs who inspire others and gives a hope that great things can be achieved with sheer will power.

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An Examination of Max Pain Theory in Option Trading

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Abstract

Max pain or option pain price is the strike price where total payoff of options (calls and puts) written on a particular stock with same expiry date is minimum giving maximum loss to buyers. It is based on open interest of all In-The-Money (ITM) options.

Option pain strategy predicts that by expiry stock price moves towards max pain strike price. This may give positive result when there are large written positions of Max Pain options near to expiry for less liquid stocks. But for highly liquid stocks it is like chasing mirage, due to very high flow of volumes, the max pain becomes a bullet speed moving target as and when volume surges with price jumps. Moreover, for high liquid stocks manipulation of stock price to max pain price is not easy by option writers.

Option pain strategy completely ignores futures positions build up on the same underlying stock by option writers for hedging and other big players like market makers taking counterparty positions for speculative retail traders. Most option trading happens in index options that are highly liquid and hence option pain strategy doesn't work well for index prediction by expiry. In this paper max pain or option pain is computed for Nifty and Bank Nifty Indices for 24th December, 2019, a trading day prior to expiry at 26th.

Key Words: Max Pain, Open Interest, Call, Put, Expiry, Strike Price

Introduction

There are many controversial theories and concepts in the stock market and derivatives market. Among them "option pain" or "max pain" finds a definite spot. There are equal number of supporters for this theory and same number of people who are against this theory and concept. In this paper, an attempt has been made to introduce max pain or option pain theory and deep dive into pros and cons of this theory. This theory expects the practitioners and learners to deal with open interest, strike price, stock price, expiry etc. This research effort focuses on the option pain model of options trading which will help the investors and finance students to diligently view the risk spot and maximum loss.

It has been said that the investor must revise and/or remix the portfolio time to time or at least when the situation warrants for the same. An option contract for both call and put gives the right and not an obligation to the holder of the contract to buy or sell underlying security like a stock or a bond at a stated date (maturity/expiry) and price (strike price).

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Theoretical Framework and Literature Review

The present paper is in line with the work contributed by Pan and Poteshman, 2006; Ni, 2008; Cremers and Weinbaum 2010; Ge Lin and Pearson, 2016; Cremers, Fodor and Weinbaum 2017. All the mentioned authors have examined the role of information flows between stocks and options markets. Research by Hu (2014) found that option traded stocks behave differently than usual stocks. Filippou, Garcia-Ares and Zapatero (2021; 2022) researched and studied the substitution effect between lottery stocks and lottery options. Seminal research by Avellaneda and Lipkin (2003) suggested a framework on delta-hedging which can explain clustering of prices at expiry of the options. In a similar track, Ni et al. (2005) documented evidence of delta hedging by market makers at or near the option expiration and because of this individual stocks and stock index futures makes clusters at or near the expiration. In that direction, further research by Ni, Pearson, Poteshman and White (2021) examined further hedging far from the expiration affects stock return volatility and chances of stock price jumps. Series of research by Ni et al. (2005) writing of options in week before expiration results in to clustering of optionable stocks at strike prices. Blocher, Engelberg and Reed (2012) attempted to find out the reason behind clustering of prices and they cited that it is the short-sellers' selling pressure in the last moments of calendar years results in to clustering of prices. Some experts show that hedge funds manipulate the stock prices and due to this clustering of price take place and this were confirmed by Ben-David, Franzoni, Landier and Moussawi (2013). Henderson, Pearson and Wang (2020) examined market data and came to the conclusion that there are some structured equity products (SEPs) issuers manipulate the price during SEP's pricing dates.

The paper is organized as follows: It starts with Theoretical framework and literature review (section 2) followed by introduction (section 1). Next, there is an information about data collection, study period and methodology (section 3) used in section named methodology. Empirical results are provided in section 4. Conclusion with broad range of robustness is provided in section 5.

Max pain or option pain or the max pain price is the strike price with the most open options contracts meaning both puts and calls at this price there would be a financial loss at maturity for the largest number of option holders. This term 'max pain' has originated from the maximum pain theory, and this indicates that most traders buy and hold option contracts until expiration will lose money.

As per the maximum pain theory, the price of an underlying asset i.e. security has a tendency to resonate towards maximum pain strike price. This maximum pain strike price is that price where majority of the option contracts will expire without exercise. According to this theory, option sellers or option writers hedge the contracts which they have sold or written. It is because writing of the option contracts comes with unlimited risk. While writes do the hedging to minimize loss, market makers do hedging to remain neutral in their position. It is normal that call writers want that price of the underlying should go down while put writers prefer that price of the underlying share should go up. As the maturity or expiry of the option contracts approaches, option writers or sellers will buy or sell underlying assets (i.e. shares of stock) to move the price towards a closing price for profitable move. Else they do hedging for their payouts to option holders.

As per the market practitioners, around 60% of options are traded out and only 10% options are exercised while 30% of options expire without being exercised. Max pain is this point where option buyers feel "maximum pain" and as the name suggests they lose the most money and option writers reap most of the profits.

As per the market experts and practitioners, the movement for the underlying asset price to move or gravitate towards maximum pain strike price may be because of chance or a matter of market manipulation.

Calculation of Max Pain

To calculate maximum option pain; what is required is sum of the outstanding put and call value of each ITM strike prices. Below is the method to calculate Max Pain of option contracts.

1. Difference between an assumed strike price and all ITM strike prices is calculated
2. This difference is multiplied by the open interest at the respective ITM strike prices
3. At this point total payoff of all ITM puts and ITM calls values are added
4. This step is repeated for each strike price assuming expiry at that assumed strike price
5. Lowest payoff strike price is determined as the max pain price

The max pain price does not remain same as the market changes every minute, every hour and every day. It is not easy to tap it as a trading tool. Whenever there is a large difference between the current stock price and max pain price, it gives a good signal. There may be a tendency of the asset price to gravitate towards max pain, but the effects may not be significant till maturity approaches.

If this theory is true, one can give the logic behind this trait is that writers manipulate the stock prices to reduce their cost at the maturity of the options. Based on this theory and behaviour, one can postulate many hypothesis and tests. But, before testing these entire hypotheses what is required is to test whether the “Max Pain theory” holds. With this objective, Max Pain measure of a stock can be defined as the distance between the Max Pain price and the current price of the stock. Earlier options used to expire on last Thursday of every month and nowadays it is weekly expiry for index options.

Methodology and Data

Day end call and put option data are collected for Nifty 50 and BankNifty from www.nseindia.com file names fo24DEC2019bhav.csv.zip and fo26DEC2019bhav.csv.zip. Max pain theory was tested for 24th December 2019 a trading day prior to expiry by 26th 2019.

Empirical Results and Summary Statistics

Max pain calculations for Nifty 50 and BankNifty as on 24th and 26th December, 2019 are done in [Table 1](#); [Table 2](#); [Table 3](#); and [Table 4](#) respectively; Payoff bar charts are also shown at various strike prices in [Figure 1](#); [Figure 2](#); [Figure 3](#); and [Figure 4](#) respectively.

In [Table 1](#): Nifty 50 Max pain calculations as on 24-Dec-2019, max pain is determined as 12,200. Nifty 50 is at 12,214.55 level and max pain theory implies a fall of 14.55 points by expiry i.e. end of next trading day. But Nifty 50 is at 12,126.55 with a fall of 88 points and max pain is 12,100 as shown in [Table 2](#): Nifty 50 Max pain calculations as on 26-Dec-2019. The gap between new max pain price and closing price is small at 26.55 points.

Similarly in [Table 3](#): BankNifty Max pain calculations as on 24-Dec-2019 max pain is determined as 32,300. BankNifty is at 32,280.75 level and max pain theory implies a rise of 19.25 points by expiry i.e. end of next trading day. But BankNifty is at 31,997.70 with a fall of 283.05 points and max pain is 32,000 as shown in [Table 2](#): Nifty 50 Max pain calculations as on 26-Dec-2019. The gap between new max pain price and closing price is very small at 2.30 points.

The discrepancy between max pain and actual closing price on expiry can be attributed to the following reasons.

First: max pain itself is not a static number but is flowing as per the build-up of open interest in options. So what happens to max pain price during the trading hours on expiry day will predict closing price more accurately than previous day's max pain price. Hence, max pain price is a moving target difficult to be chased.

Second: for highly liquid stocks it is like chasing mirage, due to very high flow of volumes in options market, the max pain becomes a bullet speed moving target as and when volume surges with price jumps in the underlying asset. Moreover, for high liquid stocks manipulation of stock price to max pain price is not easy by option writers. Most option trading happens in index options and hence option pain strategy doesn't work well for index prediction by expiry.

Third: max pain theory assumes some market activity by option writers that will maximise their profits and tend to push underlying asset price to max pain price. It ignores that option writers could take hedging positions in futures or cash market. The hedged option writers too will try to maximise their own profits which may not be at max pain price.

Fourth: max pain theory completely ignores other big players in the derivatives market who deal primarily in futures like some market makers taking counterparty positions for speculative retail traders. They could take hedging positions in options or cash market and may also try to maximise their own profits which may not be at max pain price.

Fifth: Overnight news or incidents across the world may give upside or downside shock to the underlying asset price. This would partially be captured in trading volumes in cash market and open interest build up in derivatives (both futures and options) market. Hence, max pain price could move away depending on over or under reaction of market participants. Few examples of upside shock news are: obtaining a new licence, winning of new orders / tenders, winning a pending court dispute etc. Few examples of downside shock news are: wars, terrorist attacks, labour strikes, new regulations, losing a pending court dispute etc.

Table 1: Nifty 50 Max pain calculations as on 24-Dec-2019

NIFTY 24-Dec-2019		12,214.55	Max Pain	12,200.00
PAYOFFS in INR Lakhs				
SNO	STRIKE	CALLS	PUTS	TOTAL
1	11750	60,772	71,880	1,32,653
2	11800	62,436	62,788	1,25,224
3	11850	64,256	54,895	1,19,150
4	11900	66,088	47,075	1,13,162
5	11950	68,068	40,079	1,08,146
6	12000	70,058	33,219	1,03,277
7	12050	72,775	27,886	1,00,661
8	12100	75,537	22,779	98,316
9	12150	78,683	18,680	97,363
10	12200	81,918	15,273	97,191
11	12250	86,018	13,283	99,302
12	12300	91,259	11,993	1,03,253
13	12350	98,206	11,111	1,09,317
14	12400	1,05,923	10,272	1,16,194
15	12450	1,14,608	9,512	1,24,120
16	12500	1,23,468	8,756	1,32,224
17	12550	1,33,166	8,212	1,41,379
18	12600	1,42,902	7,670	1,50,571
19	12650	1,52,939	7,138	1,60,077
20	12700	1,62,984	6,607	1,69,590
21	12750	1,73,264	6,088	1,79,352

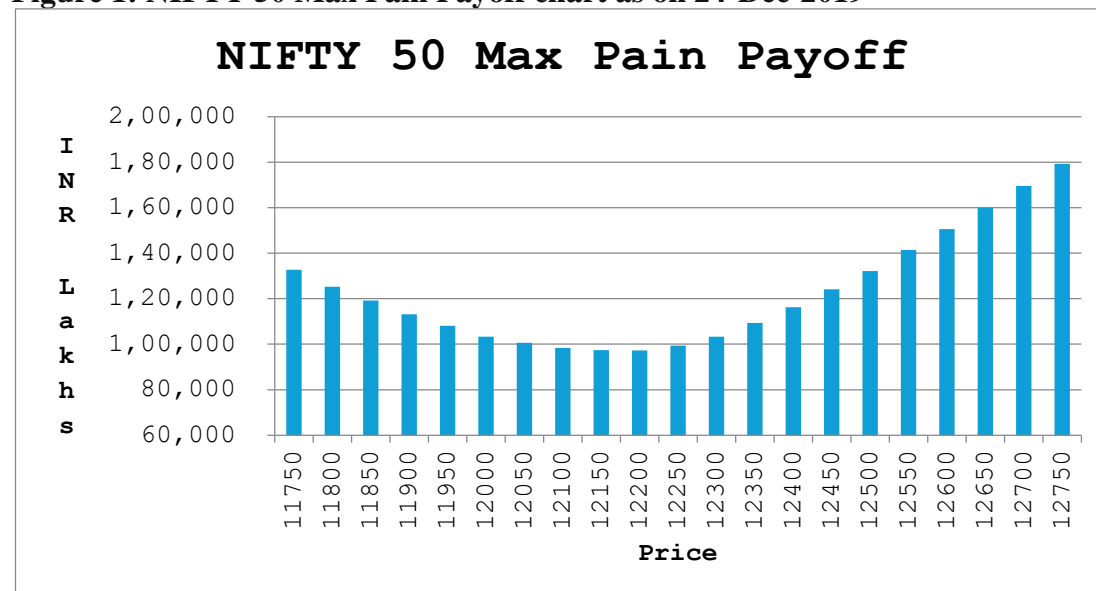
Figure 1: NIFTY 50 Max Pain Payoff chart as on 24-Dec-2019

Table 2: Nifty 50 Max pain calculations as on 26-Dec-2019

NIFTY 26-Dec-2019		12,126.55	Max Pain	12,100.00
PAYOFFS in INR Lakhs				
SNO	STRIKE	CALLS	PUTS	TOTAL
1	11650	41,242	65,041	1,06,283
2	11700	42,444	57,264	99,707
3	11750	43,712	50,030	93,742
4	11800	44,986	42,845	87,832
5	11850	46,359	36,679	83,038
6	11900	47,761	30,577	78,338
7	11950	49,266	25,292	74,558
8	12000	50,806	20,156	70,962
9	12050	53,024	16,646	69,670
10	12100	55,325	13,305	68,630
11	12150	57,943	11,325	69,268
12	12200	61,942	9,843	71,784
13	12250	67,979	8,851	76,830
14	12300	75,716	8,048	83,764
15	12350	85,353	7,419	92,772
16	12400	95,679	6,849	1,02,528
17	12450	1,06,931	6,336	1,13,267
18	12500	1,18,332	5,825	1,24,156
19	12550	1,30,481	5,442	1,35,922
20	12600	1,42,667	5,060	1,47,727
21	12650	1,55,091	4,688	1,59,779

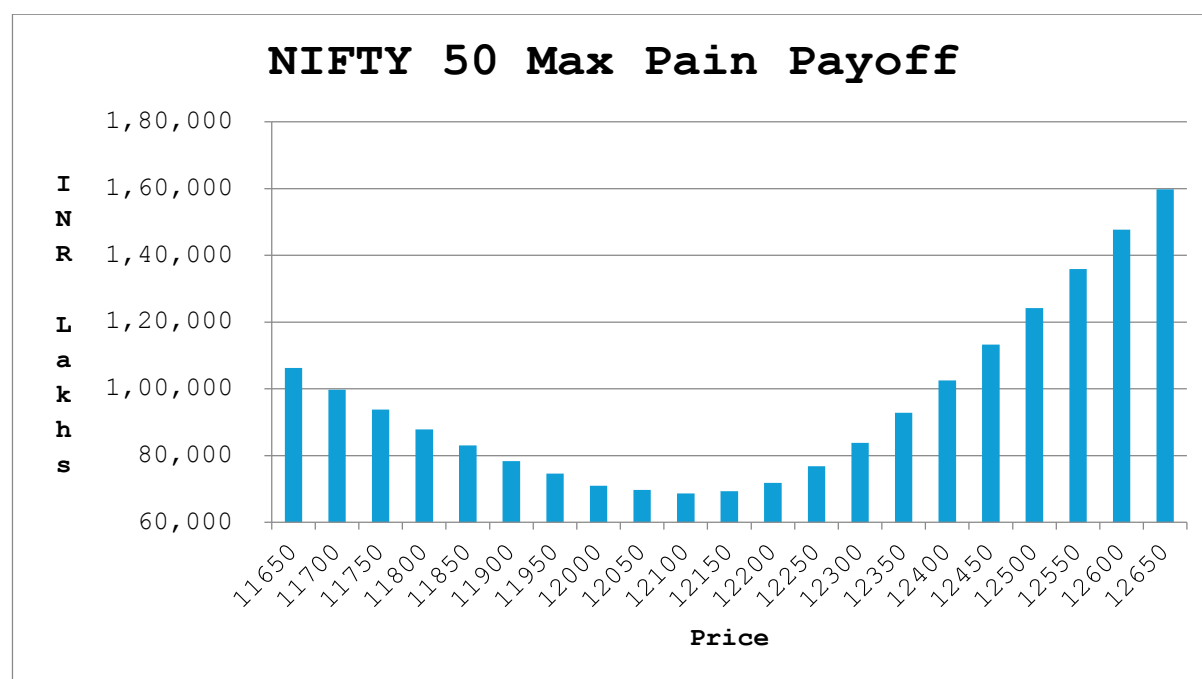
Figure 2: NIFTY 50 Max Pain Payoff chart as on 26-Dec-2019

Table 3: BankNifty Max pain calculations as on 24-Dec-2019

BANKNIFTY 24-Dec-2019		32,280.75	Max Pain	32,300.00
PAYOFFS in INR Lakhs				
SNO	STRIKE	CALLS	PUTS	TOTAL
1	31300	4,726	30,418	35,144
2	31400	4,998	26,329	31,327
3	31500	5,281	22,300	27,581
4	31600	5,595	18,645	24,240
5	31700	5,921	15,076	20,997
6	31800	6,254	11,638	17,893
7	31900	6,600	8,499	15,099
8	32000	6,959	5,612	12,571
9	32100	7,520	3,622	11,143
10	32200	8,141	2,101	10,241
11	32300	9,004	1,112	10,116
12	32400	10,392	697	11,089
13	32500	12,353	492	12,845
14	32600	15,211	402	15,613
15	32700	18,521	338	18,859
16	32800	22,191	298	22,490
17	32900	26,082	263	26,346
18	33000	30,119	231	30,350
19	33100	34,617	208	34,825
20	33200	39,291	184	39,475
21	33300	44,065	161	44,226

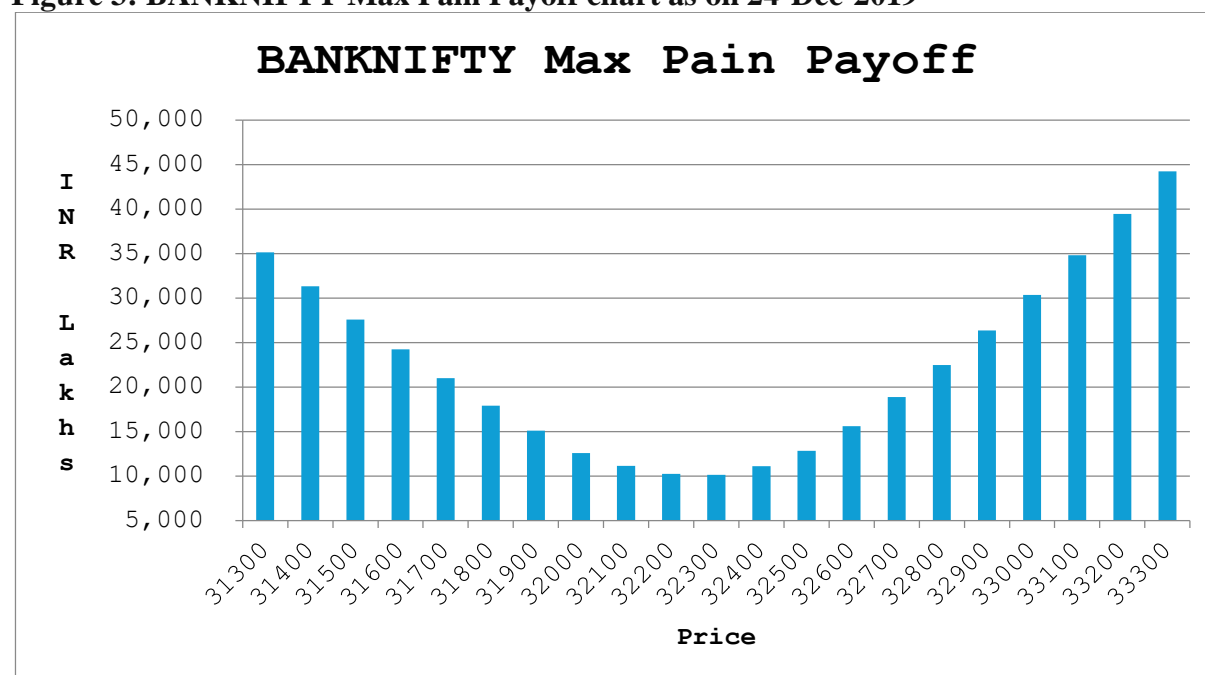
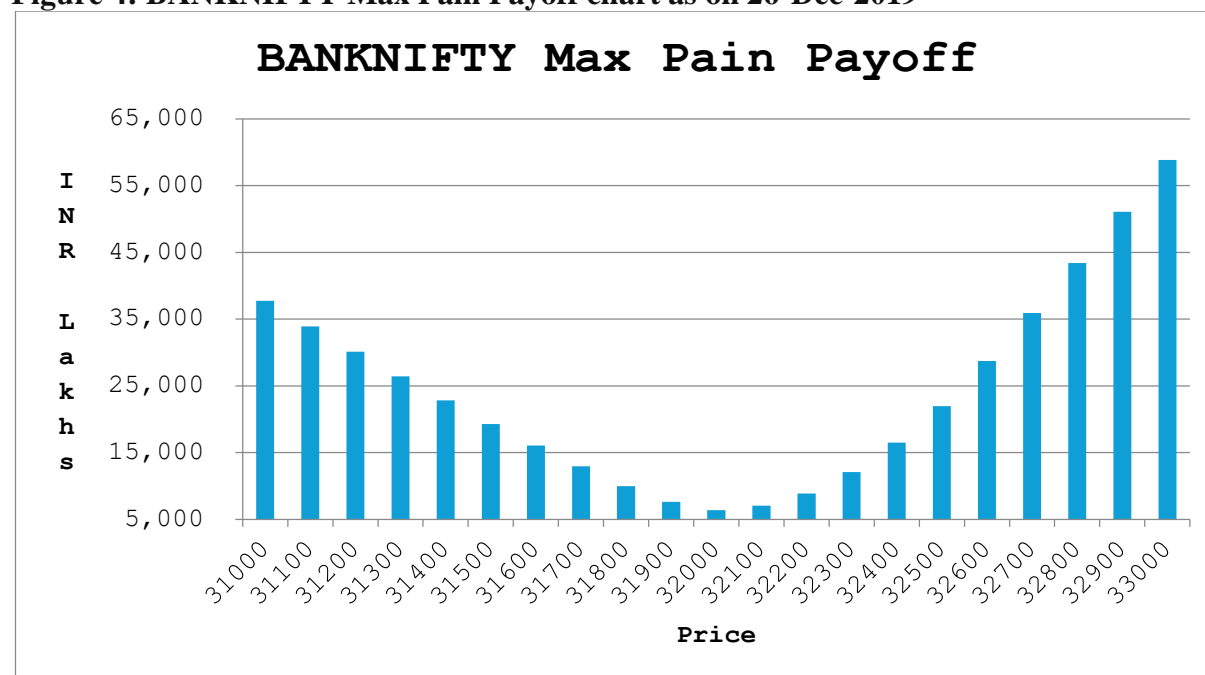
Figure 3: BANKNIFTY Max Pain Payoff chart as on 24-Dec-2019

Table 4: BankNifty Max pain calculations as on 26-Dec-2019

BANKNIFTY 26-Dec-2019		31,997.70	Max Pain	32,000.00
PAYOFFS in INR Lakhs				
SNO	STRIKE	CALLS	PUTS	TOTAL
1	31000	2,707	35,030	37,738
2	31100	2,907	30,993	33,900
3	31200	3,108	27,019	30,126
4	31300	3,311	23,112	26,423
5	31400	3,519	19,312	22,830
6	31500	3,732	15,565	19,297
7	31600	3,965	12,113	16,078
8	31700	4,210	8,735	12,945
9	31800	4,466	5,523	9,989
10	31900	4,746	2,889	7,634
11	32000	5,082	1,301	6,383
12	32100	6,108	938	7,046
13	32200	8,203	677	8,880
14	32300	11,583	502	12,086
15	32400	16,099	389	16,488
16	32500	21,648	307	21,955
17	32600	28,458	264	28,722
18	32700	35,694	227	35,921
19	32800	43,224	203	43,428
20	32900	50,915	182	51,097
21	33000	58,712	163	58,874

Figure 4: BANKNIFTY Max Pain Payoff chart as on 26-Dec-2019

Futures and Options (FnO) trading data for Nifty 50 and BankNifty is shown in Table 5 and Table 6 respectively for both days 24th and 26th December, 2019. These tables show the number of contracts traded in a day as Volume and also shows Open Interest (OI) at end of the day and Change in Open Interest (COI) occurred during the day.

Table 5: Nifty 50 FnO trading data as on 24 and 26-Dec-2019

No. Of Contracts		Previous day	12,262.75		Previous day	12,214.55
		24-Dec-19	12,214.55		26-Dec-19	12,126.55
NIFTY	CALLS	PUTS	FUTURES	CALLS	PUTS	FUTURES
VOLUME	18,30,230	19,06,161	1,02,262	29,46,115	28,97,387	1,10,224
OI	2,97,802	4,13,971	98,820	3,65,035	3,62,748	68,607
COI	-9,400	-73,465	-47,992	67,233	-51,223	-30,213
COI/VOL	-0.5%	-3.9%	-46.9%	2.3%	-1.8%	-27.4%
COI/OI	-3.1%	-15.1%	-32.7%	22.6%	-12.4%	-30.6%

Table 6: BankNifty FnO trading data as on 24 and 26-Dec-2019

No. Of Contracts		Previous day	32,339.45		Previous day	32,280.75
		24-Dec-19	32,280.75		26-Dec-19	31,997.70
BANK NIFTY	CALLS	PUTS	FUTURES	CALLS	PUTS	FUTURES
VOLUME	38,72,087	38,05,307	78,814	1,44,85,161	1,10,02,542	116,802
OI	2,51,164	2,77,766	44,759	4,28,935	2,61,804	17,286
COI	10,687	-8,594	-10,808	1,77,771	-15,962	-27,473
COI/VOL	0.3%	-0.2%	-13.7%	1.2%	-0.1%	-23.5%
COI/OI	4.4%	-3.0%	-19.5%	70.8%	-5.7%	-61.4%

Conclusion

In this paper, we tried to examine the empirical validity of the Max Pain theory for index options Nifty 50 and BankNifty.

Next Steps:

Examine the empirical validity of the max pain theory for individual stocks with various levels of liquidity.

Examine the empirical validity of the max pain theory pre and post stock price jumps accompanied by volume surges.

Develop and examine the empirical validity of modified max pain assuming all options with all expiries will be closed or squared-off immediately.

Develop a methodology to incorporate futures trading data along with modified max pain to increase accuracy in predicting stock price by earliest expiry.

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