

ISSN: 2583-8814 (Online)

HRC

Journal of Economics and Finance

Volume 2, Issue 4
Oct - Dec, 2024

Hansraj College
University of Delhi



HRC
Journal of
Economics and
Finance

Volume 2, Issue 4
October - December, 2024

ISSN: 2583 - 8814

Double Blind Peer Reviewed International
Journal

ABOUT THE COLLEGE

Hansraj College is one of the largest constituent colleges of the University of Delhi. The college was founded by the D.A.V. College Managing Committee on 26th July, 1948 in the sacred memories of Maharshi Dayanand Saraswati and Mahatma Hansraj who spent their magnificent lives emphasizing the importance of knowledge. It is one of the leading lights in the D.A.V. family of over 700 institutions.

Hansraj College is a premier institution dedicated to teaching and research. It has highly qualified academicians who impart education in Science, Commerce, and Arts at undergraduate and graduate levels to more than 5000 students. The college has consistently demonstrated outstanding performance in academics, sports, and extracurricular activities.

The college has completed 76 years in the realm of imparting higher education. It has made significant and unparalleled contributions in terms of producing scholars, bureaucrats, intellectuals, and sportsperson serving in different domains not only in our own country but even at international levels.

Hansraj College stands at the cusp between the past and the future today. While it retains inspiring facets of its proud history, with an equally sharp gaze it looks ahead, assimilating the exciting world of new knowledge as it unfolds in front of it, holding the promise of an experience seeped with exhilarating learning and holistic growth for all those who enter its portals.

About the Journal

The *HRC Journal of Economics and Finance* is a **double-blind peer-reviewed academic journal** for students, researchers, and faculty to showcase their research pertaining to the discipline of economics and business. It is an international journal. Our mission is to provide a platform through which scholars can publish their scholarly findings to showcase them with the research community at large. We invite research papers and articles on topics related to the field of economics, business and management for its quarterly journal publication.

Message from the Principal

The launch of the *HRC Journal of Economics and Finance* is a milestone that marks our dedication towards providing a platform to young researchers in the field of economics and finance. It is even more fortuitous that the launch has been manifested in the Platinum jubilee year of the college, the Centenary year of the University of Delhi and the 75th year of India's independence.

The New Education Policy, 2020 has launched a paradigm shift that encourages research both at the faculty and student level. Accordingly there is a growing need to provide credible platforms to present research outputs at all levels. This journal fills a significant gap and will contribute to fostering a research ecosystem thereby advancing the objectives of the NEP 2020. This journal will provide an opportunity to students, teachers and scholars, around the world to come together and showcase the links between classroom teaching and their practical training.

I congratulate the authors whose papers/articles have been published in the journal and encourage others to contribute to future issues. Appreciation is due to the Editor In-Chief of this journal, Dr. Apoorva Gupta who has worked tirelessly for the successful launch of this issue of the journal. My best wishes for the success of this venture.

Prof. (Dr.) Rama
Principal
Hansraj College

From the Editor's Desk

Dear Readers,

It is my great pleasure and privilege to present the fourth issue of the second volume of the Journal of Hansraj College, the *HRC Journal of Economics and Finance*. The journal provides a platform to young researchers in the field of economics, business, social sciences, finance and management to publish their scholarly articles. Our inclusive nature ensures that we cover the wide range of issues in the field. This issue features a diverse range of articles that provide insightful analyses and innovative perspectives on various contemporary economic topics.

We have received around thirty papers relevant to the field of development economics, political economy, macroeconomic policy, financial markets, international trade, and behavioral economics. All the papers went through three rounds of review process, first by the editors and then by the review board. All the papers have gone through double blind peer review process. The authors were communicated with the revisions. The papers were accepted only after the satisfactory revisions were being made. We strictly follow the research ethics and do not tolerate plagiarism. All the selected papers were tested for plagiarism before publication. We have worked tirelessly to bring out the fourth issue of the journal with high quality research work.

Writing quality research papers takes a lot of time and effort, and the authors must be congratulated for writing their research papers for the journal, which is launched in the Platinum Jubilee year of the college, the Centenary year of the University of Delhi and the 75th year of India's independence. We also take this opportunity to congratulate the review board of this issue for their constant academic support for the timely release of the journal. We also thank the support received from the Principal of the college, Prof. (Dr.) Rama, the Advisory Board and the Editorial Board.

We hope that readers find the articles interesting, informative and engaging, and enjoy reading it. We believe that this effort of ours will stimulate further research and discussion in the field of economics and finance, and encourage readers to write for further issues of the journal. We look forward to receiving your feedback and suggestions for future issues.

Disclaimer: The opinions expressed in this journal belong to the contributors and do not necessarily reflect the viewpoints of the college, the editors, the Advisory Board, the Editorial Board, and the Review Board of the *HRC Journal of Economics and Finance*.

Dr. Apoorva Gupta

Editor In-Chief

Email: editor.jef@hrc.du.ac.in

Website: [Hansraj College, University of Delhi](#)

Members of the Team

Advisory Board

- **Prof. Surender Kumar**, HoD, Department of Economics, Delhi School of Economics, University of Delhi
- **Prof. Ritu Sapra**, Department of Commerce, Delhi School of Economics, University of Delhi
- **Dr. M. Narendra**, Retd. Chairman & Managing Director of a Public Sector Bank, Director: Mahindra Rural
- **Dr. Vandana Aggarwal**, IES, Chairperson, IFSCA Committee on Ship Acquisition, Govt. of India
- **Prof. Namrata Soni**, Department of Physics, Hansraj College, University of Delhi, Managing Editor, Hans Shodh Sudha

Editorial Board: National Reviewers

- **Editor In-Chief: Dr. Apoorva Gupta**, Assistant Professor, Department of Economics, Hansraj College
- **Member: Dr. Shailu Singh**, Associate Professor, Department of Economics, Hansraj College
- **Member: Dr. Animesh Naskar**, Associate Professor, Department of Economics, Hansraj College
- **Member: Dr. Anu Satyal**, Associate Professor, Department of Economics, College of Vocational Studies
- **Member: Mr. Pawan Kumar Rohilla**, Manager, Monetary Policy Department, Reserve Bank of India, Mumbai, Maharashtra
- **Member: Dr. Shekhar Tokas**, Assistant Professor, School of Global Affairs, Ambedkar University, Delhi

- **Member: Dr. Deepika Goel**, Associate Professor, Department of Economics, Aryabhata College
- **Member: Dr. Saumya Verma**, Assistant Professor Shaheed Bhagat Singh (Morning) College

Members of Editorial Board: International Reviewers

- **Dr. Bridget Kurtenbach**, Senior Lecturer, University of Wisconsin – Eau Claire, United States
- **Dr. Sushil Mohan**, Principal Lecturer, School of Business and Law, Centre for Change, Entrepreneurship and Innovation Management, United Kingdom

Review Board

- **Dr. Mihir Pandey**, Associate Professor, Department of Economics, Ramjas College
- **Dr. Naveen Joseph Thomas**, Assistant Professor, Jindal School of Government and Public Policy, OP Jindal Global University
- **Dr. Sanyam Khurana**, Assistant Professor, TERI University, Delhi
- **Dr. Saumya Verma**, Assistant Professor, Shaheed Bhagat Singh (Morning) College
- **Dr. Rupali Sharma**, Assistant Professor, SGTB Khalsa College
- **Dr. Lokendra Kumawat**, Associate Professor, Ramjas College
- **Dr. Deepika Goel**, Associate Professor, Aryabhata College
- **Dr. Har Simrat Kaur**, Assistant Professor, Department of Economics, Lady Sri Ram College for Women
- **Dr. Vineeta Sharma**, Associate Professor, Department of Economics, Kirori Mal College
- **Dr. Niti Khandelwal Garg**, Associate Professor, Department of Economics, Kirori Mal College
- **Dr. Bal Krishan**, Assistant Professor, Department of Economics, Hansraj College

Publisher

Dr. Apoorva Gupta
Assistant Professor
Department of Economics
Hansraj College
Email: editor.jef@hrc.du.ac.in

Issuing Body

Hansraj College
University of Delhi
Mahatma Hansraj Marg
Malka Ganj
New Delhi - 110007

CONTENTS

S. No.	Title and Authors	Page No.
1.	Millets and Food Security in India: State-wise Analysis of Sustainable Agriculture <i>Rekha Sharma</i>	1
2.	Problematic of Good Life: an exploration of social movements and the rise of global Capital <i>Moggallan Bharti</i>	19
3.	Assessing the Economic Impact of Climate Change on the Production of Wheat in Haryana: 1967-2020 <i>Nehal Chahal</i>	41
4.	Exploring Sustainable Business Practices Integrated with Changing Technology: A Bibliometric Analysis <i>Kinneri Jain and Vandana Jain</i>	55
5.	Book Review: Human Dignity and Social Justice Author: Pablo Gilabert <i>Annavajhula J C Bose</i>	77
6.	Bird's eye view on GST collection during Covid <i>Aashi Jain</i>	87

Millets and Food Security in India: State-wise Analysis of Sustainable Agriculture

Rekha Sharma¹, Associate Professor, Department of Economics,

Sri Guru Gobind Singh College of Commerce, University of Delhi, Delhi

Abstract

India occupies the most strategic position in the millet production globally. It has been able to retain the leadership because of various initiatives undertaken at national and state-level such as product diversification, giving subsidies and tax incentives, quality assurance, especially after declaration of 2023 as International Year of Millets. This study examines the production of millets in the top ten states of India from 2019 to 2024, in order to explore the impact of state-specific factors on production levels. Panel data analysis finds that the Fixed-Effects (FE) model is more suitable over the Random-Effects (RE) model supporting the crucial role of state-specific effects in influencing millet production. The Hausman test value indicates that state-specific elements account for a considerable amount of production variance. Thus, it emphasizes the need for adapting and recommending variations in state-level agricultural policies and practices to improve the productivity of millets. Moreover, significant positive coefficient of area under cultivation suggests that, particularly in states where production has been declining, emphasis should be on improving the area under millet farming. These results underline the need of focused state-specific strategies to increase millet production, which aligns with sustainability objectives and guarantees food security. Policymakers by coordinating national and state-level efforts can help to meet the Sustainable Development Goals of the United Nations by addressing the state-specific challenges and using the resilience of millets, so contributing to a more sustainable and secure food system.

Keywords: Millets, Food Security, Economic Analysis, Panel Regression, Sustainability

¹ Email: rekha.sharma@srgscc.du.ac.in

1. Introduction

Millets often referred to as "nutri-cereals" or "dryland cereal", have become popular as these are quite resistant to heat and highly productive in arid areas, supporting sustainable agriculture. Rain-fed farming systems (Priya et al., 2023; Tripathi & Vyas, 2023) would find these small-seeded grasses ideal as being highly nutritious and drought-tolerant. Since millets can thrive in harsh environments and adapt to poor soil conditions, these crops have become crucial for addressing world food security challenges (Mohod et al., 2023; Nanda & Sharma 2022). These can be broadly classified into two groups: major (pearl millet, sorghum, and finger millet) and minor (proso, tiny millet, kodo, foxtail, and barnyard millet). India has a long tradition of growing and consuming millets and is the largest producer of the millets in the world primarily focussing on pearl millet (bajra), sorghum (jowar) and finger millet (ragi).

Millets are also gaining popularity in the consumer market, particularly for being gluten-free and high-fibre food products. Millet-based food items such as flour, biscuits, and flakes are becoming popular among health-conscious consumers in countries including the United States, Europe, and Asia-Pacific. Vegetarians and vegans opt for these grains because of their high protein content. In Africa and Asia, millet-based breakfast cereals and traditional recipes are gaining popularity, contributing to a global millet-based breakfast food market that generated over USD 2 billion in revenue in 2018. This is expected to grow at more than 4.5% as the demand for fibrous, gluten-free foods rises in the next 6-7 years (Global Market Insights, 2019). Products based on millet, including porridge for newborns, are becoming significant dietary interventions to avoid malnutrition in developing nations. Additionally, millet beer, a traditional beverage in Africa, is making inroads into the global beverage market, particularly in Asia-Pacific, North America and Europe. Millets are also commonly utilized as animal feed in the United States, which adds to their economic importance (The Agricultural and Processed Food Products Export Development Authority (APEDA) and Yes Bank Report, 2022).

Given the global significance of millets and India's prominent role in their production, the objective of the study is (i) to examine the driving force behind the growing demand for Indian millets; (ii) to analyse the millet production and consumption trends in India for top ten states from 2019 to 2024; and (iii) using panel regression analysis to examine the

state-specific effects influencing millet production. Addressing the disparities through targeted research and interventions can enhance overall productivity, strengthen India's contribution to global millet supply, and promote sustainable agricultural practices.

The paper is divided into seven sections with Section 2 discussing India's position in the global context, comparing its production and consumption trends with top five countries. It then explores the driving forces behind the increasing global demand for Indian millet in Section 3 followed by a review of relevant literature in Section 4. The data sources and methodology are discussed in Section 5. The results Section 6 presents trends at both national and state levels, with a closer look at productivity factors across regions. The paper concludes with policy recommendations in Section 7, aiming to enhance India's position as a major millet producer and exporter while supporting sustainable agricultural practices.

2. India in Global Context: Production and Consumption

Globally, millet cultivation covered an area of 71.70 million hectares in 2022, showing minimal change from 71.88 million hectares in 2012. Despite this, millet production has slightly increased over the decade, reaching 90.65 million metric tons with a compounded yearly growth rate of 0.3% from 2012 to 2022. India dominates global millet production, contributing 19% of the total output in 2022 as evident in Table 1. Its leadership role is evident as millet occupies as a key staple in agriculture policy across all states and ensures its role in food security. Nigeria follows closely with a 10.01% share while other major contributors are Sudan, the United States, and China with between 6% and 7% of global production (APEDA, and Yes Bank Report, 2022).

Table 1: Millet Production in Top 5 Countries (2022)

Rank	Country	Share (%) of World Production	Millet Output ('000 MT)
1	India	19	17,600
2	Nigeria	10.01	9,000
3	Sudan	7.23	6,500
4	United States	6.91	6,212
5	China	6.34	5,700

Source: APEDA and Yes Bank Report, 2022

This production data underscores the potential for economic and food security benefits in these nations. No doubt India's leadership is positive but excessive reliance on millets for climate resilience and food security may also face challenges such as water management, sustainable land use, which could strain agricultural resources in dry areas. However, countries like the U.S. and China which have diversified agriculture system and lower share of millet production may have enough scope to integrate millet as part of broader sustainability strategy without altering the agricultural balance. Thus, it requires a balanced support from other crops, careful resource management to meet the long term goal of sustainable agriculture and food security.

Table 2 demonstrates except for sorghum consumption, consumption of all other millet in India displayed a modest decadal growth of 2% for 2012-2022, suggesting a diversification in millet consumption. Rising consumption trends in India, China, Nigeria, and Sudan show the importance of millets in both human diets and animal feed as per the agricultural practices of the nations (Paschapur et al., 2021).

There is no doubt that millet can offer sustainable solution to the global food insecurity and climate change challenge. It's their ability to withstand harsh conditions and nutritional benefits that promotes them as a crucial crop for both human consumption and economic growth. By promoting millet-based products and expanding their presence in global food systems, we can enhance food security while fostering sustainable agricultural practices across countries.

Table 2: Millet Consumption and its Growth Rate in Top 5 Countries

S. No.	Country	Sorghum Consumption ('000 MT)	CAGR (2012-2022) (%)	Other Millets Consumption ('000 MT)	CAGR (2012-2022) (%)
1	India	4,450	-1	13,300	2
2	China	11,000	16	2,700	4
3	Nigeria	6,800	4	2,000	5
4	Sudan	4,950	6	1,500	15
5	Ethiopia	4,600	2	1,100	4

Source: APEDA and Yes Bank Report, 2022

3. Driving Forces behind the Global Demand for Indian Millet

With the declaration of 2023 as the International Year of Millets, India made substantial efforts to improve its visibility in the global arena. Special efforts were made to create awareness about nutritional and environmental benefits of millets. Some key factors drive this increasing demand for Indian millets in national and international markets:

- (i) Market Research and Consumer Preferences:** Market research plays a very important role in identifying export markets and assessing consumer preferences. Indian exporters have managed to cater to the unique demands, tastes, and nutritional preferences of international consumers by aligning their products with these insights. For example, the rising interest in gluten-free, organic, and sustainable food options in Europe and North America has created a niche market for millet-based products that meet these criteria (Global Market Insights, 2018).
- (ii) Product Diversification:** Increasing the variety of any good is essential for improving its reach to customers. Indian producers have tried to diversify their basket by including products such as millet flour, snacks, cereals, and beverages; which creates more opportunities for them in the international market. It satisfies the needs of consumers who are health-conscious and also caters to the increasing trend toward plant-based and whole-grain diets (FAO, 2023).
- (iii) Government Initiatives:** Several initiatives by the Indian government have promoted millet exports such as collaborations with government trade promotion agencies and the provision of subsidies and tax benefits. For instance, by lowering taxes and giving freight subsidies on millet-processing machinery lowered their production and transportation costs, thus, making Indian millets more competitive in the global market (APEDA, 2022, 2023).
- (iv) Certification and Traceability:** The trust of any food item increases if it is certified by an agency of repute and one can track its organic contents, and follow fair trade, or sustainable production practices. These validations by the Indian government helped in gaining the confidence of customers, particularly in Europe

and North America. These consumers are willing to pay a premium for ethically sourced and sustainably produced goods (Willer et al., 2023).

- (v) **Quality Assurance:** Indian millets must guarantee quality assurance all along the supply chain if they are to meet global standards. The strict testing and following food safety rules have strengthened customer confidence and presents Indian millets as a reputable, premium-quality product on a worldwide scene (FSSAI, 2020).

4. Review of Literature

While there are many studies available on millet production and its significance, this section reviews only a few recent ones that highlight the key aspects of millet cultivation and its significance.

Tripathi and Vyas (2023) have explored the significance of millets in the historical context, tracing back thousands of years to ancient civilizations such as China and India. It gives an extensive overview of millets' global relevance, highlighting their adaptability across diverse regions, including Africa, Europe, and the Americas. Historically, millets have been a staple food in areas with challenging agroclimatic conditions due to their high levels of protein, fibre, and antioxidants. Further they concluded, because of modern agricultural practices, shifting dietary preferences, and climate change, there has been a decline in millet cultivation.

Kheya et al. (2023) emphasize that millets have been overlooked to a great extent in agricultural research, and policies even though these have nutritional and environmental benefits. Realizing this gap, several tropical countries, including India and Bangladesh, have started to focus on improvements in millet cultivation practices and marketing. Various factors such as barriers to millet adoption, inadequate infrastructure, and weak market linkages are responsible for its sluggish response. Thus, it suggests an increase in investment in research and extension services, strong market linkages, and integrating millets into national policies.

Kumar et al. (2022) underscore the importance of focusing on drylands to boost grain production, as most irrigated agricultural lands are nearing exhaustion. Drylands often present challenges due to low soil fertility, but millets offer a solution owing to their adaptability to poor growing conditions and higher nutritional value compared to traditional staples like wheat and rice. By shifting agricultural focus toward millets and other coarse cereals, there can be a significant increase in nutrient supply, with potential enhancements of 1-5% in protein and 5-49% in iron. Additionally, millets contribute to climate resilience by reducing greenhouse gas emissions, irrigation water demand, and energy use. Their ability to thrive in diverse ecological conditions with minimal need for artificial fertilizers and water has earned them the label of "Miracle Grains". It also emphasizes the need for integrating climate-smart technologies in millet cultivation to ensure sustainability and meet future demands.

Cesar and Maharajan (2022) argue that promoting millets is crucial for meeting the United Nations' Sustainable Development Goals (SDGs), particularly those related to food and nutritional security. Millets' low input requirements for fertilizers and pesticides make them suitable for low- and middle-income countries, especially in Asia and Africa. Enhancing millet production and consumption aligns with global efforts to strengthen food security and develop climate-resilient agricultural systems.

Paschapur et al. (2021) endorse that minerals like iron, calcium, and magnesium, as well as proteins and fibre, can be found in large amounts in millets. Further, consuming millets can also lower the risk of getting diseases like cancer and heart disease that are linked to modern eating and sedentary lifestyle choices. The promotion of millets as ready-to-eat and ready-to-cook products can increase income of the farmers, enhance production, and stimulate market demand. This not only supports food and nutritional security but also contributes to economic growth and job creation in developing regions.

Maitra (2020) emphasise that millet-based intercropping systems offer a sustainable agricultural practice, particularly in drylands where conventional farming faces challenges. It advocates that intercropping cereals and legumes with small millets can improve resource efficiency, prevent soil nutrient loss, and enhance soil health. This system increases resilience against extreme weather conditions, improves productivity,

and provides higher economic returns, making it a viable strategy for sustainable agriculture in resource-constrained areas.

In summary, the literature emphasizes the historical and contemporary significance of millets as a staple food crop with exceptional nutritional value and climate resilience. Despite modern challenges, the promotion of millets through climate-smart agricultural practices and market innovations presents a promising pathway to enhance food and nutritional security. Integrating millets into global and local food systems is essential for attaining long-term sustainability and guaranteeing food security for subsequent generations.

5. Data & Methodology

5.1. Data Used and its Source

The information is drawn from the various reports of Agricultural and Processed Food Products Export Development Authority (APEDA) regarding area, yield, and production of millets at the state and national level. Its basic source is US Department of Agriculture and Department of Agriculture and Farmer's Welfare, Government of India. To understand India's progress and position in global context, the data is analysed for the latest decade 2012-2022. Within India, state-level dynamics are examined using data for the latest five fiscal years for top ten states (i.e. from the year 2019-20 to 2023-24 for the ten states which have highest production in 2022-23). The estimates of 2023-24 are based on projections than actual estimates. The research uses relative percentages, ratios, and growth rates over the relevant period to explore the trends in millet output, area, and yield. Further, to delve deeper into state-level differences, we use panel regression. This method allows us to analyze the relationship between millet production and other influencing factor, area, over time across different states (Wooldridge, 2010).

Panel regression is particularly effective in this context as it accounts for both temporal effects (changes over time) and individual heterogeneity (differences between states) (Khari & Jain, 2023; Li et al., 2021). It improves the accuracy of estimates by reducing omitted variable bias and allows for better understanding of dynamic relationships in the

data. In scenarios like state-wise agricultural production analysis, panel regression helps in identifying state-specific trends and time-dependent factors affecting overall production outcomes.

5.2. Model Specification

Given the limitation of data, the basic structural model of production is considered. The millet production is a function of area cultivated, state-specific characteristics, and year. This model would enable us to estimate the contributions of each variable (area, state, year) to millet production, taking into account individual differences across states and over time (Fuss, & McFadden, 1978).

$$Production_{it} = \alpha + \beta_1 Year_t + \beta_2 State_i + \beta_3 Area_{it} + U_{it} \quad (1)$$

where: $Production_{it}$ is the millet production in state i at time t ; $Year_t$ is the time variable 2019-24; $State_i$ is the fixed effect for each state; $Area_{it}$ is the area under cultivation in each state i at time t ; U_{it} is the error term.

Fixed effects (FE) model would control for time-invariant characteristics of each state and identify the effects of years on production while accounting for unobserved heterogeneity. This model will help in comprehending the influence of each state while accounting for fluctuations over time. While random effects (RE) model would enable to determine whether the state-specific effects are randomised and uncorrelated with the variables that are considered independent.

Given the characteristics of the data pertaining to agricultural production, selecting between FE and RE models is of the utmost importance. In this study, the Hausman test was utilised to ascertain whether or not the FE model was more appropriate than the RE model. This was done to guarantee that the selected approach accurately captured the fundamental dynamics of millet production across states over the specified period.

6. Result and Analysis

6.1. Area, Production, and Productivity of Millets: All India

Table 3 shows data on millets in India, highlighting both challenges and achievement in terms of its land area, output, and productivity. Millet area cultivation has fallen from 15.40 million hectares in 2012-13 to 14.00 million hectares in 2022-23, with a compound annual growth rate (CAGR) of -0.95% over the decade. This decline can be attributed to a shift in agricultural focus towards crops that require more water, such as rice and wheat, which are often preferred due to their higher economic returns.

Table 3: Millets Production and Sustainability Data in India (2012-13 to 2022-23)

Indicator	2012-13	2022-23	CAGR (2012-23)	Plausible explanation
Area under Cultivation (Mn Ha)	15.4	14	-0.95%	Decrease in area due to shift towards more water-intensive crops.
Production Volume (Mn MT)	16.03	17.6	0.94%	Modest growth in production despite reduced area.
Productivity (MT/ha)	1.04	1.26	2.00%	Increase in productivity due to improved practices and hybrid varieties.

Source: APDEA and Yes Bank Report, 2022

Despite the reduction in the area under millet cultivation, millet production has shown a modest increase, growing from 16.03 million MT in 2012 to 17.60 million MT in 2022-23, with a CAGR of 0.94%. This growth is particularly significant given the shrinking land allocated to millets because of improved agricultural practices; use of high-yielding and hybrid varieties of millets. These changes have allowed farmers to achieve higher production levels on reduced acreage, showcasing the resilience and adaptability of millet cultivation (Tripathi & Vyas, 2023; Kumar et al., 2022).

Furthermore, productivity has increased from 1.04 metric tonnes per hectare in 2012-13 to 1.26 metric tonnes per hectare in 2022-23, reflecting a CAGR of 2.00%. This boost in productivity indicates the success of modern farming techniques and the introduction of improved millet varieties, which have contributed to sustaining and even enhancing production levels despite a decrease in the cultivated area (Paschapur et al., 2021).

Overall, while the reduction in the acreage under millet presents challenges, improvements in productivity and output demonstrate the crop's adaptability and potential as a sustainable option (Chakrabarti & Mittal, 2023). Millets' low requirements of water and their ability to survive in less fertile soils make them particularly valuable in

promoting sustainability and food security, especially in drought-prone regions. These characteristics underscore the importance of millets in diversifying crops and enhancing resilience against climate change and water scarcity (Ceasar & Maharajan, 2022; Maitra, 2020).

6.2. Area, Production, and Productivity of Millets: State-wise

A deeper look into India's millet production in 2022-23 reveals notable state-level variations which need to be appreciated as depicted in Figure 1. Referring to Table 4, one finds Rajasthan dominantly leads in both area and production, cultivating 52.12 lakh hectares and producing 56.7 lakh tonnes, but its yield is moderate at 1088 kg per hectare. States like Uttar Pradesh and Haryana, though smaller in area, show impressive productivity with yields of 2051 kg and 2195 kg per hectare, respectively. These figures suggest effective farming practices or more favourable growing conditions in these regions. In contrast, Maharashtra, despite its large cultivation area of 18.99 lakh hectares, reports a lower yield of 933 kg per hectare, indicating potential areas for improvement in productivity.

Andhra Pradesh stands out with the highest yield of 2826 kg per hectare, signaling highly efficient cultivation practices or optimal environmental conditions. Meanwhile, Gujarat and Madhya Pradesh also demonstrate strong performance, with yields exceeding 2000 kg per hectare. In contrast, Tamil Nadu and Uttarakhand present middle-level yields of 1287 kg and 1528 kg per hectare, respectively.

This analysis reveals both positive growth in certain states and challenges in others, reflecting varying agricultural conditions and efforts across India in millet production. While the decline in cultivation area may pose challenges, particularly in expanding millet's role in food security, the rising productivity offers hope for sustainable growth (Chakrabarti & Mittal, 2023).

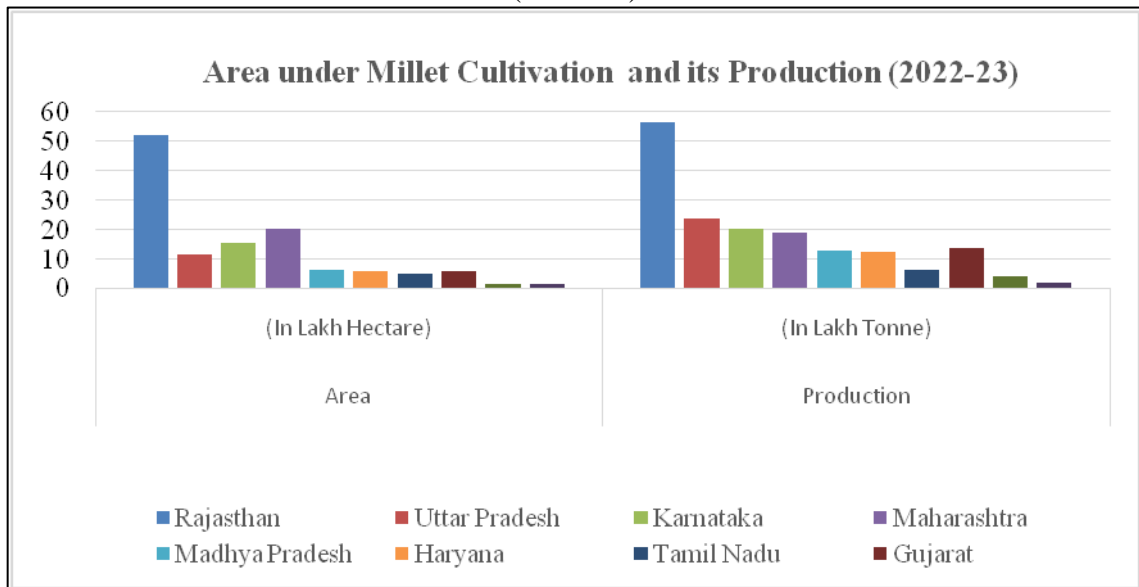
Table 4: State-wise Area, Production and Productivity of Millets in India (2022-23)

States	Area (in lakh hectare)	Production (in lakh tonnes)	Productivity (in kg/hectare)
Rajasthan	52.12	56.7	1088
Uttar Pradesh	11.55	23.69	2051
Karnataka	15.27	20.33	1331
Maharashtra	20.35	18.99	933
Madhya Pradesh	6.05	12.54	2072
Haryana	5.53	12.14	2195
Tamil Nadu	4.9	6.3	1287
Gujarat	5.52	13.64	2473
Andhra Pradesh	1.33	3.76	2826
Uttarakhand	1.15	1.61	1528
All India	126.98	17.32	1364

Source: APEDA Report (2023)

https://apeda.gov.in/milletportal/files/Statewise_Millet_Production.pdf

Figure 1: Graphical Presentation of State-wise Area and Production of Millets in India (2022-23)



Source: APEDA Report (2023)

https://apeda.gov.in/milletportal/files/Statewise_Millet_Production.pdf

6.3. Trend in Millet Cultivation and Production in India: State-wise

Table 5 presents data on millet production across the top ten states in India from 2019-20 to 2023-24, highlighting both growth and challenges in this sector. Rajasthan consistently

leads as the top millet producer, although its production has fluctuated, peaking at 56.74 lakh tonnes in 2022-23 before declining to 48.09 lakh tonnes in 2023-24, which may be attributed to changing weather patterns and shifts in cultivation practices (Tripathi & Vyas, 2023). Uttar Pradesh shows a steady increase in millet production over the years, rising from 21.72 lakh tonnes in 2019-20 to 26.98 lakh tonnes in 2023-24, likely due to successful agricultural strategies and better resource access (Kumar et al., 2022).

In contrast, Karnataka exhibits a gradual decline in production, decreasing from 25.56 lakh tonnes in 2019-20 to 17.49 lakh tonnes in 2023-24, possibly indicating challenges in sustaining output due to climatic conditions or a shift towards other crops (Ceasar & Maharajan, 2022). Similarly, Maharashtra shows a downward trend with production dropping from 24.29 lakh tonnes to 17.15 lakh tonnes for the same period, reflecting a possible shift in agricultural focus or external factors affecting millet cultivation (Paschapur et al., 2021).

Conversely, Madhya Pradesh stands out with a consistent increase in millet production, growing from 8.96 lakh tonnes in 2019-20 to 12.68 lakh tonnes in 2023-24, signaling successful agricultural practices and possibly the adoption of high-yielding varieties (Maitra, 2020). Haryana experienced fluctuations, peaking at 13.67 lakh tonnes in 2020-21 before stabilizing at 11.94 lakh tonnes in 2023-24, which may be due to variations in weather conditions or input use (Khari & Jain, 2023).

Other states show varying trends; Tamil Nadu witnessed a steady decline in production, falling from 10.17 lakh tonnes in 2019-20 to 6.23 lakh tonnes in 2023-24, potentially due to a shift towards other crops or environmental challenges (Li et al., 2021). Gujarat experienced a mixed trend, with a sharp increase from 9.9 lakh tonnes in 2019-20 to 13.64 lakh tonnes in 2022-23, followed by a significant drop to 4.51 lakh tonnes in 2023-24, indicating the influence of market demand and weather conditions (Khari & Jain, 2023). Andhra Pradesh faced a decline in production, decreasing from 5.14 lakh tonnes in 2019-20 to 3.9 lakh tonnes in 2023-24, which may reflect a shift in agricultural focus or challenges in productivity (Ceasar & Maharajan, 2022). Uttarakhand maintained relatively low levels of millet production, with a slight decrease from 1.91 lakh tonnes in 2019-20 to 1.61 lakh tonnes in 2023-24, likely due to its specific climatic and geographical constraints limiting large-scale cultivation (Tripathi & Vyas, 2023).

This analysis reveals a complex landscape of millet production across India, with some states showing positive growth and others facing challenges in maintaining or increasing their production levels. These variations highlight the impact of differing agricultural conditions, resource availability, and policy measures on millet cultivation across the country. Understanding these state-wise trends is crucial for formulating focused plans to augment millet production and long-term sustainability in India's agricultural sector.

Table 5: State-wise, Production of Millets in India during last five years (2019-20 to 2023-24)

State	2019-20	2020-21	2021-22	2022-23	2023-24
Rajasthan	51.47	51.56	42.8	56.74	48.09
Uttar Pradesh	21.72	22.98	22.26	23.69	26.98
Karnataka	25.56	25.69	20.54	20.33	17.49
Maharashtra	24.29	25.14	23.05	18.99	17.15
Madhya Pradesh	8.96	10.24	11.81	12.54	12.68
Haryana	10.35	13.67	11.32	12.14	11.94
Tamil Nadu	10.17	9.05	7.65	6.3	6.23
Gujarat	9.9	10.92	11.79	13.64	4.51
Andhra Pradesh	5.14	5.41	3.59	3.76	3.9
Uttarakhand	1.91	2.01	2	1.76	1.61

Source: APEDA Report (2023)

https://apeda.gov.in/milletportal/files/Statewise_Millet_Production.pdf

6.4. Panel Regression Analysis

The findings of the panel regression are summarized in Table 6, contrasting the fixed-effects and random-effects models to assess millet production across the top ten states in India. Both models utilize 50 observations across 10 groups, representing the state-level panel data.

The analysis of millet production using FE and RE models provides insights into the impact of time and area on production levels across different states. Both models are statistically significant; with the FE model showing an F-statistic of 48.43 and the RE model a Wald chi-squared of 179.31, both with p-values of 0. However, the year coefficient is not significant in either model, suggesting that changes over time do not have a substantial impact on millet production. In contrast, the area under cultivation is highly significant in both models, indicating that increasing the area significantly boosts

millet production, a result that is consistent with previous research highlighting the direct relationship between cultivated area and crop output.

Table 6: Results of Panel Regression

	Fixed-Effects (FE)	Random-Effects (RE)
Number of Observations	50	50
Number of Groups	10	10
F-statistic/Wald chi2	F(2,38) = 48.43	Wald chi2(1)=179.31
Prob > F / Prob > chi2	0	0
Year Coefficient	0.0446 (p = 0.780)	-0.0275 (p = 0.860)
Area Coefficient	1.1955 (p = 0.000)	1.0198 (p = 0.000)
Constant	1.3	3.7265
Sigma_u (Variance due to u_i)	5.6154477	4.1249583
Sigma_e (Error term variance)	1.4937149	1.4937149
Rho (Fraction of variance due to u_i)	0.9339	0.8841
F test that all u_i = 0	F(9, 38) = 35.29 , Prob > F = 0.0000	

Source: Author's calculation

The variance components reveal that a large portion of the variability in millet production is due to differences across states rather than random variation, as indicated by the high rho values in both models. The Hausman test result (p = 0.0914) suggests a preference for FE model, indicating state-specific characteristics may be associated with the independent variables.

Given these findings, FE model is considered more apt for this dataset, as it effectively captures the state-specific variations that influence millet production. It highlights the critical role of state-level factors, suggesting that policies and interventions aimed at enhancing millet production should consider these unique state-specific characteristics.

7. Conclusions and Policy implications

The analysis of millet production in India from 2019-20 to 2023-24 reveals important trends and regional variations that have important suggestions for food security and agricultural policy. While the overall area under millet cultivation has declined but a positive trend in production underscores the crucial role of rising productivity. The

increase in yield suggests adoption of better farming practices, use of high yielding varieties, demonstrating its resilience and potential for sustainable agriculture. Analysis of top ten states highlights some states like Uttar Pradesh, Madhya Pradesh show an increase in millet production while others such as Karnataka, Maharashtra experienced decline. These variations underline the importance of regional factors, including climatic conditions, agricultural practices, and state-specific production policies.

The regression analysis shows that the area under cultivation has a significant positive impact on millet production. This result underscores the direct relationship between the extent of cultivated land and production output, emphasizing the need for optimal utilization and potential expansion of millet cultivation areas to boost overall production. Policies should focus on enhancing the area under cultivation for millet, especially in states where production has been declining.

The comparative analysis of the FE model, preferred over the RE model underscores the significance of state-specific factors in influencing millet production suggesting that state-level policies and conditions are crucial in understanding and improving millet production.

The cultivation of millets should be encouraged to achieve the objective of sustainable agriculture as these have ability to thrive in low water and less fertile conditions, harsh climate conditions. There is a need for state-specific strategies to promote millet production that address the unique problems and opportunities associated with each state. Every state should have targeted support and incentives, and training on best agricultural practices, especially those which have witnessed a decline in production of millets. By strengthening market linkages, developing value chains, putting efforts in research and development of high yielding disease resistant varieties, millet cultivation can become economically more viable for farmers and achieve the broader sustainability goals. In conclusion, an integrated policy framework that coordinates national and state-level efforts will be crucial for tapping the full potential of millets, contributing to a secure and sustainable food system in India.

References

- Agricultural and Processed Food Products Export Development Authority (APEDA) and Yes Bank (2022). Indian Superfood Millets: A USD 2 billion Export Opportunity. https://apeda.gov.in/milletportal/files/Indian_Superfood_Millet_APEDA_Report.pdf
- Agricultural and Processed Food Products Export Development Authority (APEDA). (2023). State-wise Millet Production. Retrieved from https://apeda.gov.in/milletportal/files/Statewise_Millet_Production.pdf
- Ceasar, S. Antony, & Maharajan, T. (2022). The role of millets in attaining United Nation's sustainable developmental goals. *Plants People Planet*, 4(4), 345–349. <https://doi.org/10.1002/ppp3.10254>
- Chakrabarti, D. K., & Mittal, P. (2023). *Plant Disease Forecasting Systems*. Plant Disease Forecasting Systems. Singapore: Springer Nature Singapore. <https://doi.org/10.1007/978-981-99-1210-0>
- FAO (2023). Food Agricultural Organisation (2023). *Millets recipe book - International Year of Millets 2023*. Rome. <https://doi.org/10.4060/cc8019en>
- FSSAI (2020). Food Safety and Standards Authority of India. Guidance Notes: Version 2 - Millets. [PDF] https://www.fssai.gov.in/upload/uploadfiles/files/Guidance_Notes_Version_2_Millets_29_01_2020.pdf
- Fuss, M., & McFadden, D. (1978). *Production Economics: A Dual Approach to Theory and Applications*. Amsterdam: North-Holland Publishing Company.
- Global Market Insights. (2019). *Millets Market Reports and Insights*. Retrieved from <https://www.gminsights.com/filters?q=millets>
- Khari, P., & Jain, R. (2023). Dynamics of Consumption Expenditure and Poverty Statistics in a Rural-Urban Context. *VEETHIKA-An International Interdisciplinary Research Journal*, 9(2), 4–13. <https://doi.org/10.48001/veethika.2023.09.02.002>
- Kheya, S. A., Talukder, S. K., Datta, P., Yeasmin, S., Rashid, M. H., Hasan, A. K., ... Islam, A. K. M. M. (2023). Millets: The future crops for the tropics - Status, challenges and future prospects. *Heliyon*, 9(11), e22123. <https://doi.org/10.1016/j.heliyon.2023.e22123>
- Kumar, L., Naresh, R. K., Tiwari, H., Kataria, S. K., Saharan, S., Reddy, B. R., Singh, R. P. (2022). Millets for Food and Nutritional Security in the Context of Climate Resilient Agriculture: A Review. *International Journal of Plant & Soil Science*, 939–953. <https://doi.org/10.9734/ijpss/2022/v34i232504>
- Li, K., Hu, E., Xu, C., Musah, M., Kong, Y., Mensah, I. A., ... Su, Y. (2021). A heterogeneous analysis of the nexus between energy consumption, economic growth and carbon emissions: Evidence from the Group of Twenty (G20) countries. *Energy Exploration and Exploitation*, 39(3), 815–837. <https://doi.org/10.1177/0144598720980198>
- Maitra, S. (2020). Intercropping of small millets for agricultural sustainability in drylands: A review. *Crop Research*, 55 (3&4). <https://doi.org/10.31830/2454-1761.2020.025>
- Mohod, N. B., P., A., Borah, A., Goswami, P., Koshariya, A. K., Sahoo, S., & N., P. (2023). The International Year of Millet 2023: A Global Initiative for

- Sustainable Food Security and Nutrition. *International Journal of Plant & Soil Science*, 35(19), 1204–1211. <https://doi.org/10.9734/ijpss/2023/v35i193659>
- Nanda, A., & Sharma, R. (2022). How Climate, Crops, and Health Concerns Are Scripting a Millet Revolution in India. *Emerging Economy Studies*, 8(1), 52-57. <https://doi.org/10.1177/23949015241234978>
 - Paschapur, A. U., Joshi, D., Mishra, K. K., Kant, L., Kumar, V., & Kumar, A. (2021). Millets for Life: A Brief Introduction. *Millets and Millet Technology*. https://doi.org/10.1007/978-981-16-0676-2_1
 - Priya, Verma, R. K., Lakhawat, S., Yadav, V. K., Gacem, A., Abbas, M., Mishra, S. (2023). Millets: sustainable treasure house of bioactive components. *International Journal of Food Properties*, 26(1), 1822–1840. <https://doi.org/10.1080/10942912.2023.2236317>
 - Tripathi, T., & Vyas, S. (2023). From ancient grains to modern solutions: A history of millets and their significance in agriculture and food security. *International Journal of Home Science*, 9(2), 72–78.
 - Willer, H., Trávníček, J., Meier, C., & Schlatter, B. (2022). The world of organic agriculture 2022. *Statistics and Emerging Trends*, 342.
 - Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT Press.

Problematic of Good Life: an exploration of social movements and the rise of global Capital

Dr. Moggallan Bharti¹, Assistant Professor, School of Development Studies, Dr. B. R. Ambedkar University, Delhi (AUD)

Abstract

The paper explores the political roots of the putative idea of ‘good life’ that presumes what form of an economic foundation a nation state must have in order to provide good life to its citizens. The paper attempts to underscore that the building of a political economy that could possibly facilitate over all wellbeing to its citizens cannot be conceived in a situation where the societal ethics are dissociated from the issues of justice. It is then contended that the actualization of such a political society – society of ethics and justice – is preconditioned on the availability of the politics of social justice, an idea central to the political world view of Dalit and the indigenous social movement in Latin America. The paper highlights the differential responses of both the social groups – Dalits in India and indigenous people from Bolivia – to the market economy. It is shown that despite their ideological resistance to neoliberalism, there are sections within the Dalits and indigenous people who view things differently. The opportunities offered in the changed political scenario where market has an overarching presence, these groups are willing to exploit the same for their representation – something which was never available to them in earlier economic arrangement. However, the papers tread carefully on the larger the social and political difference between Bolivia and India, and attempts to account for the structured hierarchies in both the countries. Taking an eclectic view, the paper underlines the significance of the entrepreneurship possibility among the people who have been denied the same for ages, and put emphasis on the significance of the

¹ Email: mogallan@aud.ac.in

economic opportunities made available – albeit limited – in the new political economy driven by neoliberalism.

Keywords: Caste, Social Justice, Indigenous Movement, Dalit Movement, Post colonialism, Neoliberalism, and Capitalism.

1. The idea of Good Life

The construction of a good life has been one of the most integral components of the politics of all times. Be the proponents of the welfare economics, of the free market or even those who are hardened Marxists – who conceives a possible good life *only* after the demise of capitalism – have all, but a common denomination of an achievable conception of a good life with varying ideological differences. There has been ample work in the field of philosophy, economics and anthropology which put great emphasis on the significance of politics that serves the objective of extending the fruits of good life to the larger public.² The desired aims of a political society, hence forth, are to achieve a life of fulfilment for the people. This idea, in the formation of a political society, remains at the centre of some of the most profound philosophical debates and questions exploring meaning of lives and its purpose. From Plato's 'ideal state' to Aristotle's 'rule of law', to the cherished values of enlightenment era, conservatives not excluded, up till the more contemporary concerns for social justice – the ways for realizing a good life has been implicit in the varying world of liberal political philosophy.

However, such political society promising good life requires the building of a political economy conducive to accomplish such a life. Consequently, economics plays an instrumental role in the assembling of such a political order enabling to people's needs and requirements for having a better life. In other words, even before politics comes to have a go at it, the philosophical necessity that remains is the form of economic foundation that will lead to such a life for its inhabitants. Are there some universal guiding principles for the realization of good life? Are the ethics and morals important for the making of such a life? How much is the share of economy in the formation of such a

²Avishai Margalit, *The Decent Society*, Harvard University press.1996; George Akerlog, and Kranton, 'Economics and identity', *The Quarterly Journal of Economics* 115.3 (2000): 715-753.; Adam Smith, *The theory of moral sentiments*, Penguin, 2010

society that promises good life? Is the liberty of an individual integral to such a formulation, or the construction of a good life must negate everything of individual interests at its core? Essentially then, the central question which arises is that what form of economic foundation must a state lay down in order to realize such completion.

Discussing the similar question of what constitutes a good life, it is contended that in the world of philosophy both the ‘theories of justice’ and ‘morality’ have seemingly taken to ‘their own separate path today’.³ Any possibility for ‘morality’ joining cause with the ‘ethics’ can only happen when ‘an ethical self-understanding’ informed through moral insights underlines the necessity of ‘one’s own well-being with the interest in justice’.⁴ With this insight we must then locate the construction of a plausible political economy – a condition necessary to realize good life – in the politics of social justice. Amartya Sen underlines the increased chasm between ethics and economics leading to deficiency in contemporary economic theory. For him, any meaningful economic reorganization both at the level of theory and practice must engage with the study of moral philosophy.⁵ Building on Rawls predicament that happiness is not synonymous with one’s well-being, where the former is simply a ‘momentous achievement’⁶, Sen put forth the idea of going well beyond the ‘self-interest’ seeking definition of well-being to something more grounded and tangible rooted in individual capacity. Evidently two things become clear, first, the presence of the welfare state is essential and second, any such likely political order must then de-centre the individual self-interests and listen to the qualified concerns of community. In other words, it become obligatory to look for the ‘common good’ approach instead of merely thinking in the domain of ‘rights’ where an individual – albeit sovereign and supreme – self-limits the probable political possibilities of his own wellbeing.

It is in the background of such a discourse exploring the idea and meaning of what constitutes a good life and the economic contours of the same that we shall attempt to understand the missing link in the broader politics driving the same objective. Additionally, it is through the politics of the social movement engaged on such alternative

³Jurgen Habermas, ‘Are there Postmetaphysical Answers to the Question: What is the “Good Life”?’ in *The Future of Human Nature*, Polity Press 2003, Pg 1 – 16

⁴ Ibid. page 4.

⁵ Amartya Sen, *On Ethics and Economics*, Basil Blackwell 1987.

⁶ Ibid. page 60

political economy which then bring us closer to desired understanding of the idea of good life. The study of social movements in the context of Dalit and indigenous people's struggle for the life of liberty, equality and dignity informs the very infrastructure of a political process that can define the constituents of well-being for the people at large. Both indigenous peoples' thought and the political discourse among Dalit community give primacy to organizing a communal life, derived through their own rich cultural past which has been up till now left marginalized and unexplored in most of the standard academic work of political economy.

The available rich corpus of the theoretical writings on the political economy from so called third world nations is conspicuous by the absence of an understanding imparted by such marginalized discourses on political economy as that of Dalit-indigenous world view. Hence in order to arrive at the Dalit-indigenous response to the current economic crisis – formulated through the social movements in Bolivia, Latin America, and Dalit movement in India – we must then locate the same in the broader sequence of world system of capitalism and attempts to understand the process of unbridled growth of global capital.

2. World Capitalism and the growth of Market Economy

The evolution of capital, the corresponding spread of the Western imperialism, the exploitation of the colonies fuelled by the industrial needs of the west, anti-colonial struggles against the abject exploitation of the colonies and the subsequent formation of the sovereign independent government in the new nation-states, is all but one seamless trajectory, wherein lies the Dalit-indigenous voices trying to etch out a new world perspective from the misery of their long drawn exploitation both at the hands of colonial plundering and by the incessant social apathy of their 'fellow natives' in their respective geographical location. The hegemony of capital and its associated trade behaviour has been at the centre of five hundred years of the history of colonial plunder in Asia, Africa and particularly in South America where it all began with Columbus finding of the 'new

world' in 1492.⁷ One important aspect of colonialism in this light has been the continuous search by imperial west for finding new markets along with its hunt for more natural resources to fuel the growth of the then ongoing industrialization in the imperial core. Even after decolonization, perhaps the expected withdrawal of global capital's hold from third world remained elusive. The new 'nation states' were soon sold the dream of novel 'development path' now widely known as neoliberalism.

The alternative economic model of socialism and welfare economics remained an aberration in the world where economics as a discipline has been deliberately studied in isolation from politics. French economist Francois Morin is correct in saying when he points out the need for bringing the economy in the realm of 'political economy' and the need for more political economist at work who could see the world of deception and global scams set out by the hegemony of the free flowing finance capital.⁸ The monopoly of resources thus ensue the meteoric rise in the wealth of the already wealthy, and has further pushed the working masses to the brink of starvation and to the status of an entirely impoverished and a dispossessed lot.⁹ The inevitability of the free market seen as the most efficient way of organizing economy became the new norm not only at home of the capital but more importantly among the former colonies. A process which was succinctly highlighted as "the two independent master processes of the [modern] era: the creation of a system of national states and the formation of a worldwide Capitalist system".¹⁰ The birth of the nation state and the spread of global capitalism have been both, the obverse and the reverse side of the same coin, where the world witnessed the emergence of the domestic bourgeoisie tethered to the economic interest of the metropolitan.

In other words the newly emergent nation states through its bourgeoisie acted as a catalyst for the spread of global capital, as the former lacked the infrastructure of capital which continued to be centred at its home in the west – a point very well explained by the

⁷ Eduardo Galleno, *Open Veins of Latin America – Five Centuries of the Pillage of a Continent*. Three Essays Collective, 2010

⁸ Francois Morin, *A World Without Wall Street?* Seagulls Books, 2013

⁹ Ibid.

¹⁰ Charles Tilly, *Big Structures, Large Processes, Huge Comparisons*, New York: Russell Sage 1984. Page 147

Peruvian philosopher Anibal Quijano.¹¹ Latin America, as is known, has been the first to delink itself from its imperial masters and declared independence in the beginning of the nineteenth century. However, its relationship with the coloniality¹² remains to be of one continuous struggle against the European and now North American socio-economic interests dominating its land.¹³ The pre-colonial and the post-colonial world as we see today would not have been possible but for the colonization of Americas, which is ‘the constitutive act of the modern world-system’.¹⁴

This new mode of operability of the capital at the global scale is also termed as the ‘financialization’ of the capital or the ‘finance capital as the latest and highest stage of world capitalism.’¹⁵ This very aspect of financialization occurs not as an aberration to Capital, but as its integral component, whereby the financial expansion which defines the global economy of today ‘is not a new phenomenon but a recurrent tendency of historical capitalism from its earlier beginnings.’¹⁶ Furthermore, this financial expansion of the global economy is not merely a recurring phenomenon to capitalism but also reorganizes the regime of capital accumulation. In other words, capitalism resorts to finance capital in the time of its crisis, developed due to the factors internal to it, in order to further its hegemonic grip on the world economy.

The dynamism of historical capitalism gives us a peek in to the neoliberal world order of more contemporary times, wherein one sees the everyday rising anger and frustration among the common masses against the economic order which has caused severe unemployment and acute agrarian crisis. Keeping the alternate perspective offered from indigenous Bolivia against the hegemony of the world capitalist system and the churning

¹¹Anibal Quijano, Imperialism, Social Classes, and the State in Peru, in *Theories of Development: Modes of Production or Dependency?* Edited by Ronald H. Chilcote and Deale L. Johnson, Sage publications, 1983

¹² Coloniality is defined as the ‘creation of set of states linked together within an interstate system in hierarchical layers’ in Anibal Quijano and Immanuel Wallerstein, *Americanity as a concept, or the Americas in the modern World-System*, ISSJ 1992, Page 550

-It is further explained as something which continues even after the end of ‘formal colonial status’ and the hierarchy of the coloniality which is actually the extension of the colonial hierarchy between the Colonizer and the Colonized gets manifested in the socioeconomic and political realm which then in turn informs the world-system economy.

¹³Anibal Quijano, Coloniality and Modernity/Rationality, in *Globalization and the Decolonial Option*, edited by Walter D. Mignolo and Arturo Escobar, Routledge 2010

¹⁴Anibal Quijano and Immanuel Wallerstein, *Americanity as a concept, or the Americas in the modern World-System*, ISSJ 1992, Page 549 – 557

¹⁵ Giovanni Arrighi, *The Long Twentieth Century – Money, Power and the Origins of our Times*, Verso 2010

¹⁶ Ibid. page 371.

among the Dalits vis a vis neoliberalism, there is an attempt here to understand the underdevelopment of the global south and the subsequent political discourse generated to address the same through social movements in both the country.

3. Decolonization and the Third World Nationalism

After the decolonization wave in Asia and Africa and the two great wars, the economic arrangement favouring the erstwhile colonial powers in furthering their imperial interests remained largely intact.¹⁷ This continuance of their economic hegemony, is a question to the ‘nationalist’ churning in the so called third world, even before one engages with the socio-political movements leading to decolonization. The legacy left by the anti-colonial movements was claimed by the ruling elites on the promise of forming a new nation completely absolved of its colonial past. However, barring few honourable exceptions, the writ of colonial paraphernalia is written all over the postcolonial state. And this mirroring of the colonial structure was never as complete as it is in the restructuring the economy of the post-colonies, which has been designed to suit the economic interest of the developed rich countries of the global North. Following which, we have the new discourse of asking a neoliberal state to intervene in order to provide basic common goods like health, education and employment for the well-being of the people.¹⁸ Expecting neoliberal post-colonial nation states intervening to provide material benefits to its citizens and at the same time work towards achieving the neoliberal dream of a ‘good life’ for its citizens is a plain, big contradiction. The alternative economic model must be then be worked out in the global south which should be critically distanced from the global capital outreach.

4. Neoliberalism: India & Bolivia

The parallel and glaring aspect of both the corresponding Bolivia and India’s economy has been the totalizing impact of the neoliberalism and at the same time, the inclination of the ruling classes to embrace the same. The functioning of the neoliberal state in both the

¹⁷ Kwame Nkrumah, *Neo-Colonialism: The Last Stage of Imperialism*, 1965

¹⁸ Jean Drèze and Amartya Sen, *An uncertain glory: India and its contradictions*. Allen Lane 2013

country, to follow Harvey's analysis, works against the interest of labour and working class in general, while at the same time strongly promotes the 'restoration or formation of class power' mostly at the expense of the former.¹⁹ This crisis of the global economy could not be better explained than the persuasive message which informs the politics of social movement in Latin America. What the indigenous people of Bolivia have achieved politically in the recent history is something of a major significance for it being the people's weapon against the dictates of the global capital. Indigenous peoples' government led by Evo Morales seemingly has been so far the most effective bulwark against the neoliberal push of the neo-imperial West.²⁰

However, both the nation states continued to remain under the ideological tutelage of global capitalism. What had defined the world economy in the colonial period through 'accumulation' from the colonies now preserve its hegemony through 'appropriation' or what Harvey describes as 'accumulation through dispossession'.²¹ This latter articulation of accumulation is very much the state of economy in Bolivia, also understood as 'extractive economy', wherein the primary source of state's revenue come through the extraction of its natural resources.²² However, this extractive economy, while is tethered to the exploitative trajectory of global capitalism, has brought a huge change in the domestic economy of Bolivia under Morales' presidency. Seeing their economic limitations and also more importantly due to its dependency on the extraction of natural resources, we see the emphasis of indigenous social movement on the politics of '*vivir-bien*', rather than relying entirely on macroeconomic growth through the extractive model.²³

¹⁹ David Harvey, *A Brief History of Neoliberalism*, OUP 2005, Page 76

²⁰ Robert Albrow, 'The Indigenous in the Plural in Bolivian Oppositional Politics', *Bulletin of Latin-American Research*, 24, 4, 2005. Page 433–53; also Linda C Farthing and Benjamin H Kohl, *Evo's Bolivia: Continuity and change*, University of Texas Press 2014

²¹ David Harvey, The 'New' Imperialism: Accumulation by Dispossession, *Socialist Register*, 2004, Page 63-87

²² Linda C. Farthing and Benjamin H. Kohl, *Evo's Bolivia: Continuity and change*, University of Texas Press, 2014

²³ Vivir Bien, which would roughly mean "well-being" or "living well" in English, is at the center of indigenous communitarian world view which under the leadership of Evo Morales aims to bring a decent and good life for all the people, as opposed to the western-liberal 'pursuit of happiness' which is considered by the indigenous people as individualistic and selfish in nature.

For further details, see Melania Calestani, *An Anthropological Journey in to Well-Being – Insights From Bolivia*, Springer. 2013; also see, Alex Tilley, *Coordinator of the Bolivia Information Forum*, Vivirbien (Living Well): a new model for development from Bolivia's indigenous process of change, at www.boliviainfoforum.org.uk/news-detail.asp?id=99

The situation of indigenous people must be then seen in the sense of what Harvey conceives as the socioeconomic questions of a given time and spaces and that are defined by the distinct ‘socio-ecological and political-economic processes’ in a given society.²⁴ It is to these distinctive patterns of processes in their respective social and political location that informs Dalit-indigenous’ understanding of what constitutes social and economic injustice and the politics subsequently evolved to remedy the same. Both the social movements have taken a very distinct recourse – while resisting the overall neoliberal project – in their ideological response to the age of neoliberalism. The common theoretical premise underneath both the political movement is essentially couched in the politics of social justice, without which it is impossible to construct a society that can enable good lives to its inhabitants marred by pervasive social inequalities.

5. Response of the Indigenous people

The indigenous exclusion from the domestic economy was far more total due to the negation of their very individual economic agency from the inception of the idea of a possible political economy, ever conceived in the country. It is a historical fact that as peasants, miners and petty workers engaged in Bolivia’s unorganized economy, indigenous people have always faced the brunt of capitalist exploitation in the domestic economy. In short, their socioeconomic status remained more or less as miserable as it was in the colonial period.²⁵ The dye of the capitalist accumulation of indigenous Bolivia casted in the colonial period carried on to its republican phase and bloomed to its bursting hue in the times of neoliberalism. The ruling elites of Bolivia have always neglected and denied indigenous people any role in the planning, and in the socio-political restructuring of domestic economy.²⁶

²⁴ David Harvey, *Justice, Nature and the Geography of Difference*, Blackwell Publishing, 1996, page 6

²⁵ Herbert S. Klein, *The Crisis of The State, 1841 – 1880*, in *A Concise History of Bolivia*, Cambridge University Press.2011; James Dunkerley, *Rebellion in the Veins, Rebellion in the Veins: Political Struggle in Bolivia, 1952–1982*, London: Verso. 1984; June Nash, *We Eat the Mines and the Mines Eat Us*, Second Edition, New York: Columbia University Press. 1993 and also Jeffery R. Webber, *Red October: Left-Indigenous Struggle in Modern Bolivia*. Brill. 2011.

²⁶ Herbert S. Klein-A Concise History of Bolivia (Cambridge Concise Histories) - Cambridge University Press (2011); Rutilio Martinez and Vish Iyer, *Latin America’s Racial Caste System: Salient Marketing Implications*. International Business & Economics Research Journal – November 2008, Volume 7, Number 11; Mariategui, Jose Carlos, *Seven interpretive essays on Peruvian reality*, University of Texas Press. 1971. Available on <https://www.marxists.org/archive/mariateg/works/1928/>

The handful of those indigenous people who were involved in the unorganized economy of Bolivia in petty trades and mercantilism were further marginalized with their minimum access to formal education and due to their long exclusion from 'state bureaucracy, universities and professional associations' which might have otherwise enabled them in finding their own niche in the domestic political economy.²⁷ The wretched lives of Bolivia's indigenous gentry was not merely due to the *mita* (free labour) arrangement (something akin to the system of *begaar* under feudalism in India), but their woes has its roots in the total exclusion that they face from all the avenues of the political economy which enables a person with less to no choices to earn their livelihood. Therefore, it is only but natural for them, then to look for the infrastructure and the support system for any economic activity within the traditional and social network of their own indigenous moorings. Thus, the indigenous social ties and traditional setting came to play an instrumental role in developing the entrepreneurial traits among *Aymara* traders of *altiplano* Bolivia.²⁸ This *indigenismo*²⁹ of shared economic life through communal ties has been singularly remarkable both in terms of indigenous political mobilization, as well as in their economic well-being. However, in the contemporary neoliberal era, an indigenous petty trader is further crammed between the larger state apathy and the dynamism of free market economy which works in negating the rights of the weakest and in benefitting the already privileged classes.³⁰ The politics of social movement thus put together have not only confronted the neoliberal regimes but have successfully worked for an alternative world informed through *vivirbien* for all as against global capitalism which excludes all, except the few powerful.

Nico Tassi, explains the response of indigenous *Aymara* people vis a vis the local economy as 'globalization from below' or the emergence of social structure of local economy under the aegis of indigenous/local as 'non-hegemonic world system'.³¹ It is

²⁷Nico Tassi, *The Native World-System – An Ethnography of Bolivian Aymara Traders in the Global Economy*, OUP, 2017

²⁸ Ibid.

²⁹ The idea of *indigenismo* is a historical one and is derived or translated from 'indigenism'. However, there are significant distinctions between the two concepts. While *indigenism* is more a contemporary socio-political development; *indigenismo* is more 'a twentieth-century intellectual and artistic movement that sought to valorise indigenous culture.' For more detail, see Andrew Canessa, *Todossomosindígenas: Towards a new language of national political identity*. *Bulletin of Latin American Research* 25.2 (2006): 241-263.

³⁰ Nico Tassi, *The Native World-system: An Ethnography of Bolivian Aymara Traders in the Global Economy*, Oxford University Press, 2017.

³¹ Ibid. page 10.

through such consolidation of ‘local power structures’ rooted in their socio-cultural norms, where no state ever reaches, let alone the depth of global capitalism, that *indigenismo* (asserting and valorising indigenous culture) ensures the ‘access to the market on their own terms’.³² The idea remains to make the local traders further enabling in the changed economic scenario of post liberalization polity, whereby they are ready to utilize all the possible resources at their disposal in order to capitalize more on their own socioeconomic status and on the ‘possibility of expanding their structure of power’. By adhering to their cultural ties and traditional set ups they have been able to create a market manifestly different from the existing mainstream understanding of economic practices. They have been particularly instrumental in bringing the social at the centre stage of economy as now conventionally understood. For instance, the internationally well-known, electrical goods manufacturers like Samsung and Sony, as a result of the opening of the domestic markets to international trade and commerce, have come up with their authorized showrooms in the swanky areas of La Paz, capital of Bolivia. However, their role in the larger market transactions is very restricted and confined only to illustrate the technical features of the product. The agreement between the local indigenous traders and the authorized shops is such that, that the latter is barred from selling the merchandise and also from even discussing the prices of their products. The same commodities can only be bought from local retailers.³³ This arrangement drawn between the pull and the pressure of neoliberalism and the indigenous commerce, albeit within the same market frame, is simply ingenious and would have been otherwise difficult to reach, if not for the availability of the local network of indigenous socio-cultural ties and their distinct ways and forms of accumulation, which has enabled the existing and the emerging indigenous traders and small entrepreneurs to access the market on their conditions.³⁴

Such a market intervention on the behalf of indigenous traders, however small numerically, serves two very important purposes. First, by deploying their social and cultural network to their benefit they have redefined the relationship between the market and the indigenous people as a whole for the benefit of the latter. The sizeable *Aymara* traders of La Paz and El Alto – a city towering over La Paz valley – are no longer seen as

³² Ibid. page

³³ Nico Tassi, 2017, page 57

³⁴ <http://www.ipsnews.net/2008/12/bolivia-aymara-traders-mix-tradition-and-modern-day-savvy/> (Accessed in the year 2017)

the timid *indios*, who have always been living at the margins of the economy. On the contrary, they are very conscious of their newly acquired economic agency and the corresponding wealth thus accumulated, and they therefore, leave no opportunity in flaunting the same.³⁵ Secondly, the political assertion of the native Indians through three decades of social movement has given them the agency to be an informed market individual rooted in its immediate cultural moorings. This duality of an indigenous individual which has remarkable similarity with the Dalit agency in India has enabled them to understand the politics rooted in empowering modernity and led them to mirror its ethos to their surroundings, which effectively implies accepting both – the liberating values of European enlightenment along with preserving their social character at the same time. This process is central to their understanding of outlining the very idea of a good life which is both social and individual at once and where an asserting individual becomes a political necessity in order to supplement and preserve their social rootedness – a characteristic indispensable for organizing a just political society.

6. Dalit Response

Notwithstanding the internal contradictions of colonial India the formation of the new ‘nation’ couldn’t alter the reorganization of relations of production, determined by the continuous overarching presence of the global capital.³⁶ In fact, India’s initial phase of development planning and the idea of development state has eventually been a major failure.³⁷ The promise of the development state, post decolonization did indeed give socio-economic relief to the people; however, the initial enthusiasm was eventually a short lived one.³⁸ Equipped with the constitutionally mandated policies for eradicating practices of untouchability among the caste Hindus in India (and not the caste system per se), the post-colonial state brought the first generation educated Dalits in its fold and gave

³⁵ https://www.washingtonpost.com/world/in-bolivia-new-andean-architecture-applies-new-money-to-old-traditions/2014/10/27/7be3a532-1fa2-443c-895a-ec9f3572ee49_story.html(Accessed in the year 2017)

³⁶ Prabhat Patnaik, *The Retreat to Unfreedom: Essays on the Emerging World Order*, Tulika 2003

³⁷ Vivek Chibber, *Locked in Place – State-Building and Late Industrialization in India*, Princeton University Press, 2003

³⁸ Mark Juergensmeyer, The Lonely Modernity of Model Town, in ‘*Caste in History*’, edited by Ishita Banerjee- Dube, OUP 2008, Page 266

them a decent life in the newly established urban centers.³⁹ The economic divide in India – triggered by the development in the policies of global capitalism – was to become wider in the days to come.⁴⁰

The immediate post-colonial scenario in India, then, while was certainly of a political victory against British colonialism, the emergent socio-political discourse was outrightly defined by Brahmanism. It continued to be so even now. The economic model adopted by the very first government was one of balancing both the assorted group of big corporate/domestic bourgeoisie and the landlords – along with active state regulation of the economy through installing government enabled various industries, popularly called the public sector units (PSUs). It was the model designed on the lines of demand management to spur the economic growth determined by a welfare state, that was in turn inspired by the Keynesian policies successfully implemented in the post war Europe from early 1950s till late 1970s termed as the golden period of western capitalism.⁴¹

Although modern in its inception, the Nehruvian model could not bring a substantial restructuring of the dogmas in the society based on the principle of *chaturvarna* (caste system divided into four classes). Harish Damodaran in an extensive work on India's capitalist class highlights the working of this unique caste alchemy in India and how most of the organized domestic economy is tightly controlled and managed by the vast network of caste and kin.⁴² The state protectionism of the domestic economy has rather reinstated and made the existing hierarchy all the more entrenched instead of dismantling the same as mandated by the constitution of the newly independent republic.

Chandra Bhan Prasad expounds on this very inefficacy of the state in bringing down the Caste order in Indian Society, as he explains that although state can definitely provide for public sector jobs and representation in legislature through the affirmative action policy and even perhaps yet to be met demand for representation in the private sector, but it does not actually disrupt the caste order, let alone dismantling the same.⁴³ Prasad argues that

³⁹ Ibid. page 267.

⁴⁰ For a more detailed analysis of this point, see Amiya Kumar Bagchi's *Perilous Passage – Mankind and the Global Ascendancy of Capital*, OUP, 2005

⁴¹ Amiya Kumar Bagchi, *Perilous Passage – Mankind and the Global Ascendancy of Capital*, OUP, 2005

⁴² Harish Damodaran, *India's New Capitalists – Caste, Business, and Industry in a Modern Nation*, Permanent Black, 2008

⁴³ Chandra Bhan Prasad, *Markets and Manu: Economic Reforms and its Impact on Caste In India*, Centre for the Advanced Study of India, University of Pennsylvania, 2007

market economy helps in dismantling the caste hierarchy based on blood and occupational purity.⁴⁴ Thus, a discourse is developed favouring economic reforms initiated in 1990 and which strongly advocates neoliberal model as the new framework for Dalit's emancipation.⁴⁵ One of the reasons behind espousing the free market is not for the liberating opportunities available in neoliberal India, which of course is questionable, but this perceptive understanding emanates from the colossal failure of the state to reign in caste atrocities against Dalits and in dismantling the upper castes social and economic hegemony. However, the fact remains that in the aftermath of sweeping reform of its economy since 1990s, the country has been increasingly witnessed to an alarming level of rising inequalities.⁴⁶

Jean Dreze and Amartya Sen outlines this growth trajectory of the development project in India and also highlights on the need of what could be done for the betterment of its most deprived sections among which Dalits invariably makes a large presence.⁴⁷ However, both Sen and Dreze do not necessarily counter argue the free market economy as such, but they focus more on the outcome aspect ensured through a more proactive role of the state. In other words, for a majority of such scholars like Sen, Dreze, Nayar, Stiglitz, and numerous others, the fundamental rule for the success of the free and fair market economy remain to be not the withdrawal of the state, but the indispensability of a much more efficient state regulation of the market. Seen in this way, their ultimate analysis for providing for the well-being of the people hinges on the fair and equitable distribution of the growth income provided for by the efficient management and regulation by the state institutions. The human agency has an important role to play in their scheme of development serving two important objectives, first in terms of state's accountability as a political task for the social movement and second as for the well-being of people as recipient of economic growth.

However, the development impact in India, by and large, remained inconsequential for Dalits, *adivasis* and other religious minorities considered the most deprived and among the weakest section of the Indian society. Dalits along with other deprived sections

⁴⁴ Ibid Page 16.

⁴⁵ Devesh Kapur, Chandra Bhan Prasad, Lant Pritchett, D Shyam Babu, Rethinking Inequality: Dalits in Uttar Pradesh in the Market Reform Era, *Economic and Political weekly*, August 28, 2010

⁴⁶ Jean Drèze and Amartya Sen, *An uncertain glory: India and its contradictions*, Allen Lane 2013

⁴⁷ Jean Dreze and Amartya Sen, *An Uncertain Glory- India and Its Contradictions*, Allen Lane, Penguin Books, 2013

together forms the overwhelming majority of the country and their socioeconomic status then actually exposes the real face of the development state. With years of development planning along with the legal and constitutional safeguards available to Dalits in India, the state has not been able to address the problem of acute discrimination prevalent against them. That the majority of the landless agriculture labours, migrant workers, workers in the unorganized economy belongs to Dalit community along with other discriminated groups is a telling account of the India's lop sided economic growth.⁴⁸

It is in this context of the abysmal neglect faced by Dalits at the hands of the post-colonial development planning on one hand, and later on finding themselves a total misfit, due to their socioeconomic exclusion in the neoliberal economy that the discourse advocated by Prasad and others should be understood. In doing so, we must not forget the horrors of capitalism and the havoc that it has brought in the lives of millions of Dalits and other poor sections of Indian society. And yet, we must not be closed to the newer debates making claim to the opportunities seemingly generated in the neoliberal economy. And in the course of our analysis we can then make some sense of the upcoming modern Dalit agency negotiating its share in the new economy – very similar to their indigenous counterparts in Bolivia.

However, we must also pay attention to the question of whether the neoliberal phase of the Indian economy has brought any positive changes to Dalit social mobility or has it caused further marginalization among them.⁴⁹ It has been argued that the social exclusion 'affects culturally defined groups' and that it 'is embedded in social relations between them, and results in deprivation or low income for those (who are) excluded'.⁵⁰ Dalits being socially and economically marginalized get further excluded because of their social embeddedness. It is due to the structural inequalities associated with the caste order that the political response of Dalits vis-à-vis neoliberalism has to factor in first and foremost their social freedom from the graded caste hierarchy of the Indian society. The discrimination thus faced by Dalits have far reaching implications on the income distribution and more importantly it leads to the denial of equal opportunity in terms of their access to market opportunities.

⁴⁸Alpa Shah et al. *Ground down by growth: Tribe, caste, class and inequality in 21st century India*, Pluto Press, 2017

⁴⁹ Clarinda Still, *Dalits in Neoliberal India: Mobility or Marginalisation*. Routledge, New Delhi. 2014.

⁵⁰Sukhdeo Thorat, Katherine S Newman, *Economic and Political Weekly*, October 13, 2007

The effect of caste on the economy is more in terms of suppression of competition, and resultantly on the unavailability of equal opportunities, and thereby inefficient allocation of labour, low profit, low wages. The entrepreneurship deficit among the Dalits and indigenous people then stems from the structural discrimination in their respective societies. Hence, solutions may not always be realized in the ‘conventional’ politics of protest wherein the market must be opposed and fought with. And for the same reasons, we then witness the emergence of a section of both Dalits and indigenous people, in their respective political economy, engaging with market economy and making their presence felt, with whatever minimum opportunity available to them therein.

It has been argued that consumerism – that has sky-rocketed ever since the neoliberal reforms in 1990s – is something which helps in breaking the traditional set up of inequalities.⁵¹ Hence, Dalits by adopting new ways of life style are coming out of their old hierarchical set up and enabling themselves by adopting the new occupations, which in turn is facilitated by the new market reforms. However, the emphasis here is on the consumption, and not on Dalits as producers in the market economy. How far then, being a consumer helps in bringing substantial change in the lifestyle of this vast marginalised section is a question which need to be probed further. However, one must examine whether new market reforms has brought any substantial change in the availability of the ‘new opportunities’ among Dalits. ‘Dalits can now buy and brandish them’, speaks more about their rising political consciousness and assertion rather than its being a ‘marker of prestige’ on a standalone basis.⁵² The market, then, is not immune to existing social structure, as against those who see market as something which weakens, if not completely eradicate, the caste structure of Indian Society. The neoliberal achievements, if any, have by far been exclusively in the favour of a class which has the necessary means to participate in the market. Hence, India too like the other parts of the global south is increasingly fraught with deprivation on the one hand and the rising assets of the tiny minority of the capitalist class on the other. And this hiatus between the rich and the poor is ever increasing. The well-being of a tiny few at the cost of the vast majority, understood in the most mechanical way under neoliberalism is not the part of the moral world order as envisioned by the social movements of marginalized. The market in India

⁵¹ Devesh Kapur, Chandra Bhan Prasad, Lant Pritchett, D Shyam Babu, Rethinking Inequality: Dalits in Uttar Pradesh in the Market Reform Era, *Economic and Political weekly*, August 28, 2010

⁵² Ibid.

is not – as is generally presumed – caste or for that matter gender neutral.⁵³ In reality, it is not the growth of the capital or the modern market economy which has brought ‘significant changes’ to the lives of the disadvantaged. On the contrary, it is the progressive ethos of modern liberal politics guaranteed under the liberal constitution of the country which acts as the leveller and provide for equality and liberty among people, particularly for Dalits. Because without the availability of the rights it is difficult to conceive a minimum equality of opportunities, let alone an entrepreneurial activity.

7. Language of rights and entrepreneurship

The contemporary discourse of free market economics must be understood alongside the evolution of the language of rights. The language of rights, central to Dalits’ political discourse, owes to liberal political philosophy and its adoption within the constitutional republic. If not for the state guided affirmative action policy and the language of ‘liberty, equality and fraternity’, a vibrant Dalit movement would have been a rare sight if not altogether impossible. The rights, thus ensured through a liberal-socialist constitution played an important role in shaping India’s politics in general and Dalit politics in particular. In this milieu, the work which advocates the free market economy for the larger welfare of Dalits not only ignores the devastation created by the neoliberalism, but it also puts forth an ill-conceived imagery of free market economy as a modern variant of liberalism. Nothing can be farther from the truth. The immediacy of ‘Dalit capitalism’, as advocated by Prasad and others, need to be understood within the history of political struggles that made the ground conducive for Dalit movement, and not to become a mere insignificant cog inside the exploitative capitalist structure, but to be the entrepreneur working towards enhancing and restoring the dignity for Dalit lives.

In other words, there is a socio-cultural deficit among the Dalits when it comes to the possibility of entrepreneurship among them; which is not exactly same as that for the indigenous groups in Bolivia, who have old social ties and a vibrant kinship network in place within their communities. The idea of entrepreneurship while is certainly an idea worth seen to be actualized, but even there (among the sizeable sections of the upwardly

⁵³ Sukhdeo Thorat and Katherine Newman, “Economic Discrimination, Concept, Consequences, and Remedies”, Thorat, and Newman (ed.), *Blocked by Caste: Economic Discrimination in Modern India*, 2010

mobile urban Dalits) to break away from the stigma attached with caste is quite an uphill task even now. For example, economic mobility for Dalits does not make their social status disappear from the society they are living in. On the contrary, there have been ample studies which shows, that Dalits often have to adapt to the pulls and pressures of upper castes in order to progress in economic activity – opportunity for which became possible in the changed domestic scenario post neoliberalism.⁵⁴ With institution like DICCI (Dalit Indian Chambers of Commerce and Industry) in place, Dalits have still to overcome the very basic infrastructure of human kinship which is almost negligible among them. It is due to the non-availability of any such kinship network in the sphere of trade industries that the very idea of Dalits utilizing the market opportunities continues to be a distant object, if not the entirely misplaced one.

8. Conclusion

So far we have discussed the near identical course of Dalit-indigenous social and political struggle for restoring their moral worth as an equal human being and how both the movements have reposed their faith in the constitutional democracy in order to achieve the same. We have also discussed their distinctly self-assured politics embedded in their social identity and how their newly gain language of the rights has been enormously helpful in furthering their politics of protest and social change. Within this context both the social groups have their distinct take on the existent neoliberal economic policies in their respective socio-cultural setting. They both emphasize on the fact that any possible conception of a good life for the well-being of an individual is contingent upon what Avishai Margalit calls a ‘decent society’. In other words, having a decent society where the rights of the fellow beings are not violated is a minimum precondition for having a good life for its inhabitants.

For Dalit-indigenous politics, the commonality is that the community and the individual member both inform and complement each other socially and politically. It is the right

⁵⁴ Aseem Prakash, *Caste and Capitalism*, available at www.india-seminar.com/2012/633/633_aseem_prakash.htm; Also, Dalit entrepreneurs in middle India, in *The Comparative Political Economy of Development: Africa and South Asia*, Edited by Barbara Harriss-White and Judith Heyer, Routledge, 2010, Page 291; See also, Barbara Harriss-White, *India Working: Essays on Society and Economy*, Cambridge University Press, 2003

bearing individual which eventually leads to the creation of a politically assertive Dalit identity and the same became possible with the advent of indigenous rights discourse for indigenous social movement. The idea is neither to give up the language of rights nor to debunk the moral economy of the shared beliefs of a community that has been politically attained and socially coalesced. Hence, their respective view on political economy, though unconventional, enables them to strive for a society where economic sustainability and political freedom could be self-determined and may not always have to be externally relied upon. This of course doesn't mean that they are unaware of the working of global capital. On the contrary, they are aware of the history of the global spread of capitalism and that it does indeed affect them, just as it does have an impact on the majority of the working people world over. However, through their distinct ideological take on the world system economy, Dalit-indigenous people make an attempt to carve out a space which could be construed as an exemplar for the diminishing forces of socialism for the possibility of a better world ahead. We must also not forget that if there is something to be gained from the political churning of the social movements in Bolivia, it is the demonstrated invulnerability of neoliberalism. Experiences from Bolivia is not only a telling account of how an indigenous peoples' social movement braces itself up against the powerful forces of neoliberalism, but it also conclusively proves to their counterparts in India that the path to adapt to 'Dalit Capitalism' is an indubitable recipe of further self-agony in the struggles for realizing the self-respect and human dignity.

References:

- Akerlof, George and Kranton, 2000, 'Economics and identity.' *The Quarterly Journal of Economics*
- Arrighi, Giovanni 2010, *The Long Twentieth Century – Money, Power and the Origins of our Times*, Verso
- Bagchi, Amiya Kumar 2005, *Perilous Passage – Mankind and the Global Ascendency of Capital*
- Calestani, Melania 2013, *An Anthropological Journey in to Well-Being – Insights From Bolivia*, Springer
- Canessa, Andrew 2006, *Todossomosindígenas: Towards a new language of national political identity*, *Bulletin of Latin American Research*
- Chibber, Vivek 2003, *Locked in Place – State-Building and Late Industrialization in India*, Princeton University Press

- Damodaran, Harish 2008, *India's New Capitalists – Caste, Business, and Industry in a Modern Nation*, Permanent Black
- Drèze, Jean and Amartya Sen 2013, *An uncertain glory: India and its contradictions*, Allen Lane
- Dunkerley, James 1984, *Rebellion in the Veins: Political Struggle in Bolivia 1952–1982*, London: Verso
- Farthing, Linda C. and Benjamin H. Kohl 2014, *Evo's Bolivia: Continuity and change*, University of Texas Press
- Galleno, Eduardo 2010, *Open Veins of Latin America – Five Centuries of the Pillage of a Continent*. Three Essays Collective.
- Habermas, Jurgen 2003, 'Are there Post Metaphysical Answers to the Question: What is the "Good Life"?' in *The Future of Human Nature*, Polity Press
- Harriss, Barbara-White 2003, *India Working: Essays on Society and Economy*, Cambridge University Press
- Harvey, David 1996, *Justice, Nature and the Geography of Difference*, Blackwell Publishing
- Harvey, David 2004, *The 'New' Imperialism: Accumulation By Dispossession*, *Socialist Register*
- Harvey, David 2005, *A Brief History of Neoliberalism*, OUP
- Juergensmeyer, Mark 2008, 'The Lonely Modernity of Model Town', in *Caste in History*, edited by Ishita Banerjee-Dube, OUP
- Kapur, Devesh, and Chandra Bhan Prasad, Lant Pritchett, D Shyam Babu 2010, *Rethinking Inequality: Dalits in Uttar Pradesh in the Market Reform Era*, *Economic and Political weekly*
- Margalit, Avishai 1996, *The Decent Society*, Harvard University press
- Mariategui, Jose Carlos 1971, *Seven interpretive essays on Peruvian reality*, University of Texas Press
- Morin, Francois 2013, *A World Without Wall Street?*, Seagulls Books
- Nash, June 1993, *We Eat the Mines and the Mines Eat Us*, Second Edition, New York: Columbia University Press
- Nkrumah, Kwame 1965, *Neo-Colonialism: The Last Stage of Imperialism*, Nelson
- Patnaik, Prabhat 2003, *The Retreat to Unfreedom: Essays on the Emerging World Order*, *Tulika*
- Prakash, Aseem, 2010, 'Dalit entrepreneurs in middle India', in *The Comparative Political Economy of Development: Africa and South Asia*, Edited by Barbara Harriss-White and Judith Heyer, Routledge
- Prasad, Chandrabhan 2007, *Markets and Manu: Economic Reforms and its Impact on Caste in India*, Center for the Advanced Study of India, University of Pennsylvania.
- Quijano, Anibal 1983, 'Imperialism, Social Classes, and the State in Peru', in *Theories of Development: Modes of Production or Dependency?* Edited by Ronald H. Chilcote and Deale L. Johnson, Sage publications
- Quijano, Anibal 2010, 'Coloniality and Modernity/Rationality', in *Globalization and the Decolonial Option*, edited by Walter D. Mignolo and Arturo Escobar, Routledge
- Quijano, Anibal and Immanuel Wallerstein 1992, *Americanity as a concept, or the Americas in the modern World-System*, ISSJ

- S. Klein, Herbert 2011, 'The Crisis of The State, 1841 – 1880', in *A Concise History of Bolivia*, Cambridge University Press
- Sen, Amartya 1987, *On Ethics and Economics*, Basil Blackwell
- Smith, Adam 2010, *The theory of moral sentiments*, Penguin
- Still, Clarinda 2014, *Dalits in Neoliberal India: Mobility or Marginalization*, Routledge, New Delhi
- Tassi, Tassi 2017, *The Native World-System – An Ethnography of Bolivian Aymara Traders in the Global Economy*, OUP
- Thorat, Sukhdeo and Katherine Newman 2010, 'Economic Discrimination, Concept, Consequences, and Remedies'. in *Blocked by Caste: Economic Discrimination in Modern India* edited by Sukhdeo Thorat and Katherine Newman, OUP
- Thorat, Sukhdeo and Katherine S Newman 2007, *Economic and Political Weekly*
- Tilly, Charles 1984, *Big Structures, Large Processes, Huge Comparisons*, New York: Russell Sage.
- Webber, Jeffery R. 2011, Red October: Left-Indigenous Struggle in Modern Bolivia. Brill. Martinez, Rutilio and Vish Iyer 2008, Latin America's Racial Caste System: Salient Marketing Implications. *International Business & Economics Research Journal* – November, Volume 7, Number 11.

Assessing the Economic Impact of Climate Change on the Production of Wheat in Haryana: 1967-2020

Nehal Chahal¹, BA (H) Economics, SGTB Khalsa College, University of Delhi

Abstract

Climate change is a multidimensional concept which has an impact on practically every area of life either directly or indirectly. Agriculture is one such area that bears the direct brunt of any such change and is responsible for the sustenance of all those who are dependent on it. This paper aims to study the ‘economic’ impact of climate change on the production of wheat in Haryana. An attempt to explain the variability in the yield of wheat due to changes in certain climate variables (maximum and minimum temperatures, total rainfall in the region and area under its production) over the time period 1967-2020 is made using the techniques of multivariable regression analysis. The results showed that, considered together, these variables do explain a large percentage of variability in the total yield of wheat in Haryana over the chosen time horizon. But it fails to explain any statistically significant changes in yield due to these individual variables. These findings are extremely important as they guide us in knowing the extent and type of implications that the phenomena of climate change lay in front of us. It can help the policymakers and researchers to design better and more effective policies as well as efficient institutions to deal with inevitable changes like that of climate change and global warming.

Keywords: Wheat, Haryana, Climate Change, Rainfall, Crop Yield

¹ E-Mail ID – nehalchahal1868@gmail.com

1. Introduction

Over the years, as per the FAO (Food and Agriculture Organisation), India has become the second largest producer of wheat in the world. Of all its states, Haryana is the fourth largest producer of wheat (as per the year 2021-22; 10447.21 thousand tonnes of production) according to the Ministry of Agriculture and Farmers Welfare, which makes it an extremely significant region. Intuitively it is expected that any major gradual impact of climate change on the production of wheat in this state is bound to have huge impacts on the availability of this crop in the country and hence impact the major chunk of population that is dependent on it for consumption purposes. Though, at present, India produces far more wheat than is required domestically due to initiatives such as Green Revolution which boosted its production in the latter half of the 20th century, but it was not always the case, especially at the time of India's independence in 1947 and even for a few decades thereafter.

Nevertheless, climate change is bound to impact every sector and hence to be able to be prepared for what comes in the future, a wise step would be to analyse its trends and impacts at the earliest. A lot of researchers have worked in this domain in the last couple of decades understanding the gravity of the situation. This paper attempts to contribute to the research in this area as it tries to delve deeper into this question by focussing on a specific state and a specific crop over a span of 50 years.

The choice of wheat as a subject of study was based on the fact that it is the 2nd most important cereal crop in India. The Ministry of Agriculture and Farmers Welfare stated that the total wheat production in the country was about 111.32 million tonnes for the year 2021-22. A large part of northern and north-western parts of the country are primarily dependent on it for consumption purposes. Therefore, it is crucial to assess the variations in agricultural output over time, particularly as the issue of climate change continues to intensify.

Another important point to note is that this phenomenon of global warming that is primarily responsible for climate change has human origins. There is growing evidence indicating that the consequences of global warming are largely attributable to human activities. The WMO (World Meteorological Organisation) Statement on the State of the

Global Climate (2020) highlights, that the global average temperature in 2020 was about 1.2°C above the pre-industrial (1850-1900) level. It is mainly due to human-induced climate change. This assertion is supported by the findings presented in the first part of the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC), 2013. Hence, it is of extreme importance that people and institutions understand the negative implications of these things and take immediate measures to stop them.

Recent empirical analyses (Aragón et al. 2021) suggest that small-scale farmers are highly susceptible to various environmental and economic shocks. This vulnerability is closely linked to the prevailing socio-economic disparities within rural communities. Hence, it is extremely important to carefully monitor such changes which have an impact on everybody, particularly the poor and the distressed. This paper concludes by presenting key policy recommendations and identifying potential areas for future research in this domain.

2. Literature Review

Recent studies, such as those by Deschênes and Greenstone (2007) and Guntukula (2020), highlight the negative impact of rising temperatures on agricultural yields. Their research demonstrates a correlation between increasing temperatures and declining crop productivity, with projections indicating potential yield reductions for key crops like wheat. Guntukula (2020) specifically notes that climate variability disrupts yield stability, raising significant concerns about food security.

This research seeks to fill the gaps in previous study by exploring the economic impact of climate change on wheat production in Haryana from 1967 to 2020, utilizing multivariable regression analysis. The results indicate that while climate variables collectively explain a significant portion of yield variability, the individual contributions of these variables lack statistical significance. This underscores the need for more sophisticated models that can isolate the effects of each climatic factor.

The paper stresses the importance of continuous monitoring of crop varieties and the implementation of educational initiatives to promote sustainable agricultural practices. In

conclusion, despite extensive research on the impacts of climate change on agriculture, particularly in recent years, there is an urgent need for more localized studies. Such research not only enhances the existing body of knowledge but also provides critical insights for policymakers. By addressing the identified gaps and focusing on the effects of climate change on wheat production in Haryana, this study serves as a valuable resource for future research and policy development.

Despite the increasing volume of research, significant gaps remain in understanding the localized effects of climate change on agricultural productivity. While aggregate analyses offer valuable insights, they often obscure the specific impacts on particular crops and regions. For instance, Costinot et al. (2016) projected a modest average effect on global GDP due to yield declines, potentially underestimating the severe consequences for countries like India, where agriculture is a cornerstone of the economy.

Focusing on the wheat-producing states of Punjab and Haryana, the analysis by Mukherjee et al (2019) reveals a connection between yield reductions and climate variability and change. During the 2002–2010 period, decreased monsoon and winter rainfall, coupled with an increase in average winter temperatures, were observed. These climatic shifts collectively had an adverse impact on wheat yields, both directly and indirectly.

Gupta et al. (2023) evaluated the economic risks posed by climate change to wheat farmers in Haryana, using econometric models to project future yield scenarios under different climate change pathways. Their findings indicated that, without effective adaptation measures, wheat yields could potentially decrease by up to 20% by 2050, underscoring the urgent need for strong institutions and policies to support farmers in adapting to a changing climate.

As per Daloz et al (2021), climate change impacts wheat yields in the Indo-Gangetic Plain by altering temperature, precipitation patterns, and water availability for irrigation. These changes lead to direct yield losses ranging from 1% to 8%.

Collectively, these studies highlight the significant challenges climate change poses to wheat production in Haryana and stress the necessity for focused research and policy measures to mitigate these impacts. The research underscores the importance of

continuous monitoring, adaptive management, and the development of resilient agricultural systems to ensure food security amid a changing climate. Patel et al (2023) emphasized the importance of government policies in enhancing farmers' resilience to climate change.

Sheetal and Falendra (2021) highlighted the socio-economic impacts of climate change, particularly on smallholder farmers. While marginal and small farmers employ various coping and climate-smart adaptation strategies, they face significant social, economic, and institutional barriers, highlighting the need for planned or policy-driven adaptation efforts. These studies collectively emphasize the need for an integrated approach that combines scientific research, policy initiatives, and farmer support to sustain agricultural productivity in the face of climate challenges.

The primary distinction of this study, compared to previous research in this field, is its focus on a broader and more detailed set of factors that could be directly or indirectly related to wheat yield or production in Haryana, a key wheat-producing region in a developing country like India. This study examines the influence of these variables over time and connects them to changes in wheat yield within the same period. It involves a case study based on time series data, analyzing critical variables such as maximum and minimum temperatures, rainfall, and the area dedicated to wheat production in Haryana.

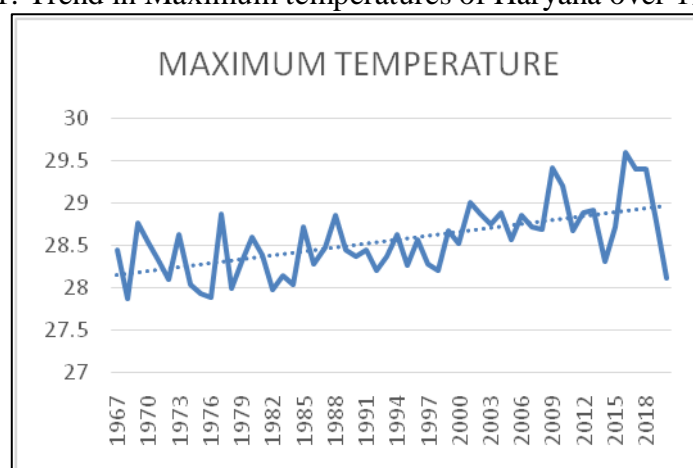
3. Methodology

To assess the impact of climate change on wheat production in Haryana, this paper uses a 'Multi-variable Linear Regression' methodology. It utilizes time series data for several climate variables, including average maximum and minimum temperatures, total rainfall, and the area under wheat cultivation, covering the period from 1967 to 2020. The logarithmic values of average wheat yield are regressed against the respective logarithmic values of each climate variable to determine the effect of changes in these variables on yield variability. The log-log form is employed to directly obtain elasticities. Initially, each independent variable is analysed separately, followed by a combined analysis that incorporates all variables.

The average maximum and minimum temperatures of India for each time period are calculated by taking the mean of the six months (i.e., October, November, December of year t ; and January, February, March of the year $t+1$) for a particular production season of wheat. Similarly, the total rainfall is calculated for the same months for the respective time periods. However, a proxy for the total rainfall in Haryana is used here which is the total rainfall over the entire region of Haryana, Punjab and Delhi. This is done due to some data availability constraints. Since this entire region is part of a similar geographical region, it is assumed that any change in the annual levels of total rainfall would be more or less symmetric. Also, caution was taken while choosing the mean temperatures (both maximum and minimum) as only the months which pertain to the growing and harvesting season of wheat in a particular production year are chosen. Then, the area under the production of wheat over the same time period for each year was taken considering it might have something to do with its yield and hence not omit any variable from the model. Visualizing changes in area, production, and yield variables is essential for identifying long-term trends before exploring trends in weather variables (Sendhil et al. 2015).

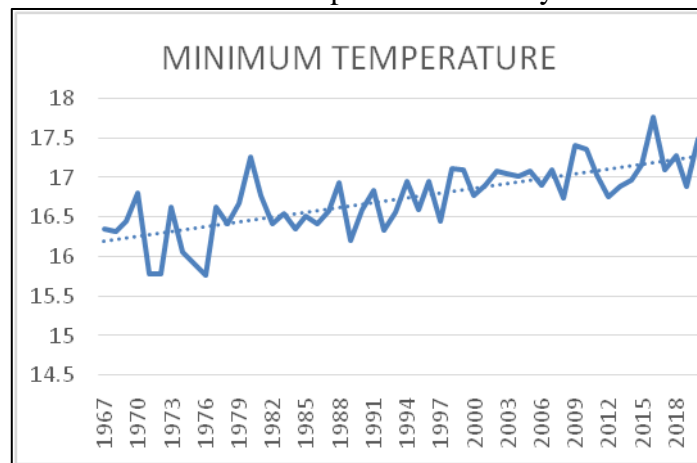
Employing changes in climate over time, as suggested by Burke and Emerick (2016), might offer a strong approach to link climate with outcomes like profits or behaviours such as crop selection, especially when considering long-term adaptation.

Figure 1: Trend in Maximum temperatures of Haryana over 1967-2020



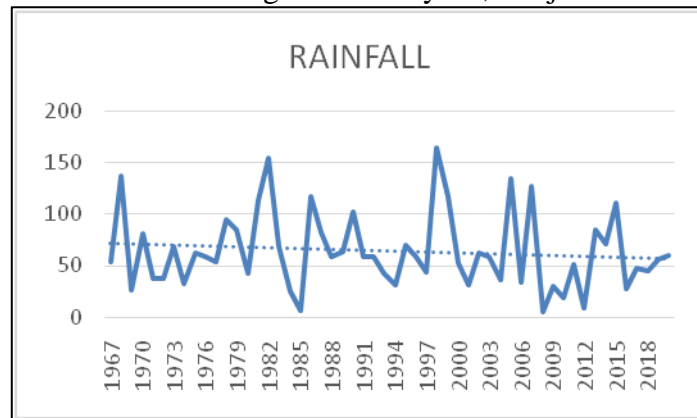
Source: Indian Meteorological Department's Data Library

Figure 2: Trend in Minimum temperatures of Haryana over 1967-2020



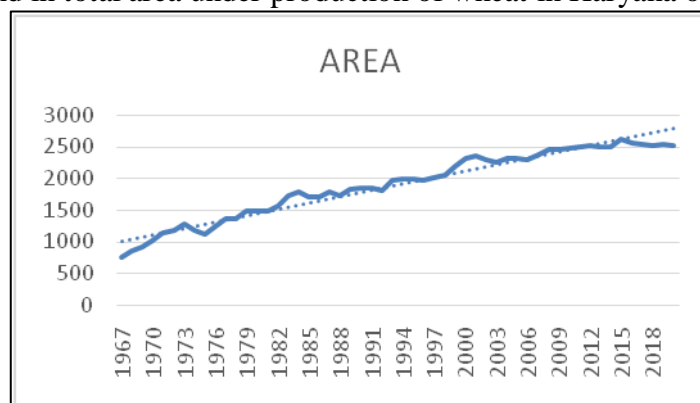
Source: Indian Meteorological Department's Data Library

Table 3: Trend in Rainfall over the regions of Haryana, Punjab and Delhi over 1967-2020



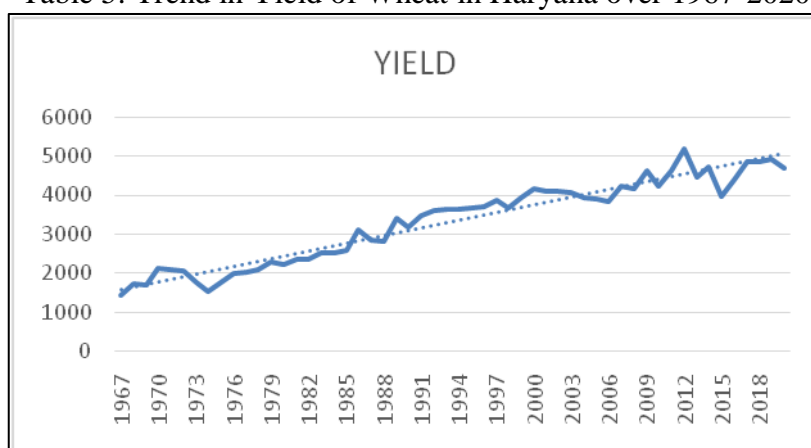
Source: Indian Meteorological Department's Data Library

Table 4: Trend in total area under production of wheat in Haryana over 1967-2020



Source: Ministry of Agriculture, Haryana

Table 5: Trend in Yield of Wheat in Haryana over 1967-2020



Source: Ministry of Agriculture, Haryana

The data used for this analysis is taken from multiple authentic and reliable sources. The data on mean maximum and minimum temperature and the total rainfall is taken from the Indian Meteorological Department's Data Library. The data on average crop yield and total area under production is taken from the Ministry of Agriculture, Haryana.

Regression Model for combined analysis:

$$\text{Log } Y_t = B_1 + B_2 \text{Log}X_2 + B_3 \text{Log}X_3 + B_4 \text{Log}X_4 + B_5 \text{Log}X_5 + u_t \quad (1)$$

Regression Model for individual analysis:

$$\text{Log } Y_t = B_1 + B_2 \text{Log}X_i + u_t \quad (2)$$

Here, Y_t is the average crop yield, X_1 , X_2 , X_3 and X_4 are the independent variables i.e., Maximum temperature, Minimum temperature, Rainfall and the Area under production of wheat, respectively. The last term in both the equations is the error term.

A multivariable linear regression model is used to analyse the situation at hand. It is an extension of the model used by Raju Guntukula (2019), which was itself inspired by the works of Kaul and Ram (2008) and Sarker, Alam, and Gow (2012) in which the authors used a linear multivariable regression equation.

4. Results and Analysis

Tables below give the results of the model. As per the results of this model, it can be concluded that the climatic variables considered here along with the area under the production of wheat do explain the variations in the annual crop yield for wheat in the state of Haryana to a large extent.

Hence, when we take the above observations together, we may conclude that while overall the model is highly significant but we should be extremely cautious while interpreting the significance of individual variables.

Table 6: Effect of all variables on the Average Wheat Yield in Haryana

Independent Variable	Slope	Standard Error	t-Ratio	Probability
Maximum Temperature	1.845	1.658	1.113	0.271
Minimum Temperature	-0.181	1.008	-0.18	0.858
Rainfall	0.017	0.024	0.691	0.493
Area	1.026	0.064	16.148	
Constant	-2.338	1.857	-1.259	0.214
R Square	0.919			
F-Ratio	139.349			
n	54			

Source: Author's calculations

Table 7: Effect of changes in Maximum Temperature on the Average Wheat Yield in Haryana

Independent Variable	Slope	Standard Error	t-Ratio	Probability
Maximum Temperature	13.963	2.927	4.771	0
R square	0.304			
F Ratio	22.763			
n	54			

Source: Author's calculations

However, due to the statistical insignificance of the respective t and p values of each variable, comments on the individual impacts of the different variables on the dependent variable cannot be made.

The correlation coefficients of average yield and each one the independent variables (average maximum and minimum temperatures, total rainfall in the region and area under

its production) respectively are 0.579, 0.69, -0.131 and 0.963. It establishes somewhat strong positive relation with the maximum and minimum temperatures, weak negative relation with the total rainfall, but extremely strong positive relation with the area under its production.

Table 8: Effect of changes in Minimum Temperature on the Average Wheat Yield in Haryana

Independent Variable	Slope	Standard Error	t-Ratio	Probablility
Minimum Temperature	9.456	1.697	-4.757	0
R square	0.472			
F Ratio	46.483			
n	54			
Constant	-8.073			

Source: Author's calculations

Table 9: Effect of changes in Total Rainfall on the Average Wheat Yield in Haryana

Independent Variable	Slope	Standard Error	t-Ratio	Probablility
Rainfall	-0.063	0.069	-0.903	0
R square	0.015			
F Ratio	0.815			
n	54			
Constant	3.604			

Source: Author's calculations

Table 10: Impact of Total Area under Wheat Production on the Average Wheat Yield in Haryana

Independent Variable	Slope	Standard Error	t-Ratio	Probablility
Area	1.053	0.044	23.863	0
R square	0.916			
F Ratio	569.436			
n	54			
Constant	0.064			

Source: Author's calculations

Table 11: Descriptive Statistics for Yield of Wheat in Haryana, 1967-2020

Mean	3.49621	Standard Error	0.021251
Median	3.558709	Standard Deviation	0.156163
Sample Variance	0.024387	Range	0.560766
Kurtosis	-0.96758	Skewness	-0.56373
Minimum	3.153815	Maximum	3.714581
Sum	188.7953	Count	54

Source: Author's calculations

On comparing with some of the earlier studies, some differences and similarities to the results were observed. The R-squared value in the analysis of R. Guntukula (2019) indicates that climate variables in India account for 93% of the variability in wheat yield. Interestingly, none of the individual climatic variables i.e., minimum and maximum temperatures, as well as actual rainfall, emerge as statistically significant in the wheat model. However, the cropped area dedicated to wheat shows a statistically significant and positive association with wheat yield. Despite the lack of statistical significance, both minimum and maximum temperatures exhibit a negative relationship with wheat yield, while rainfall has an adverse impact on wheat yield. These findings diverge from some of the earlier analysis done in this domain. These differences might have arisen because of some major distinctions in terms of the geographical locations, time period considered or models used.

5. Conclusion

To sum up, it can be said that the impact of climate change on agriculture, specifically on the production of wheat in Haryana is present and it should not be ignored while making important long term policy decisions. Overall speaking, the changes in the maximum and minimum temperatures, total rainfall in the region and area under the production of wheat are able to explain the variability in the yield of the said crop to a great extent. Though this paper fails to explain the variability in response to each one of the individual variables respectively, it still gives us some important directions to proceed.

There are a few policy implications and directions for further research that can be inferred from the results. Firstly, the department of agriculture should carefully monitor how different varieties of wheat (or any other crop) are evolving with time. A few researchers

have also focussed on the concept of adaptability of crops overtime with climate change (Kumar, 2014). This is also a scope of further research in the domain as important policy decisions should cater to the fact of how different crops and their varieties are adapting to the climate change that is happening.

Secondly, certain informative sessions could be conducted by the agricultural department to educate the people at different levels (students, farmers, environmentalists) via different mediums (online, in person sessions) catering to the needs of the people so that this phenomenon becomes widely known to people and they become even more attentive to sustainable means of living and production of various kinds of crops. This would help is in at least slowing down the negative impacts of adverse climate change, if not completely avoid it.

Thirdly, as pointed out by Dani Rodrik in his book *One Economics, Many Recipes: Globalisation, Institution and Economic Growth* (2007), the importance of institutions is equally significant even in this case as well. Better and efficient institutions would be able to handle these changes and generate responses at the earliest that are beneficial for everyone. So, an effort should be made to construct and create well-designed institutions. They can prove extremely beneficial in doing further research as well as implementation of various measures required for proper adaptability techniques that can be used for a better response to climate change.

A few more improvements could also be made to the study done here to get better results. Firstly, future research may look into the aspect of creating better models that avoid the problem of multicollinearity that is one of the possible causes behind not confirming to individual significance of each climate variable considered here to the dependent variable, i.e., the crop yield. Secondly, similar analysis should be done for other crops and states to get a better idea of the situation.

Lastly, focus should be given on how the quality of wheat is getting impacted with the change in climate. It is an extremely important point as even Kawasaki and Uchida (2016) point out that the impacts of climate change on crop quality may be more negative than on crop yields.

References

- Aragón, F., Restuccia, D., Rud, J. (2021) Are small farms really more productive than large farms?
- Birthal, S., Khan, T., Negi D. (2014) Impact of Climate Change on Yields of Major Food Crops in India: Implications for Food Security
- Burke, M., Emerick, K. (2016) Adaptation to Climate Change: Evidence from US Agriculture
- Costinot, A., Donaldson, D., Smith, C. (2016) Evolving Comparative Advantage and the Impact of Climate Change in Agricultural Markets: Evidence from 1.7 Million Fields around the World
- Daloz, A., Rydsaa, J., Hodnebrog, Sillmann, J., Oort, B., Mohr, C., Agrawal, M., Emberson, L., Stordal, F., Zhang, T. (2021) Direct and indirect impacts of climate change on wheat yield in the Indo-Gangetic plain in India
- Deschênes, O., Greenstone, M. (2007) The Economic Impacts of Climate Change: Evidence from Agricultural Output and Random Fluctuations in Weather
- Guntukula, R. (2020) Assessing the impact of climate change on Indian agriculture: Evidence from major crop yields
- Gupta, A., Agrawal, M., Yadav, A. (2023) The Effect of Climate Change on Wheat Production: Present Patterns and Upcoming Difficulties
- Kaul, S., Ram, G. (2008) An Assessment of Impact of Climate Change on Rice Production in India
- Kawasaki, K., Uchida S. (2016). Quality Matters More Than Quantity: Asymmetric Temperature Effects on Crop Yield and Quality Grade
- Kumar, S., Aggarwal, P., Rani, D., Saxena, R., Chauhan, N., Jain, S. (2014) Vulnerability of wheat production to climate change in India
- Mukherjee, A., Wang, S., Promchote, P. (2019) Examination of the Climate Factors That Reduced Wheat Yield in Northwest India during the 2000s
- Patel, S., Mall, R., Chaturvedi, A., Singh, R., Chand, R. (2023) Passive adaptation to climate change among Indian farmers
- Ramdas, S., Meena, R.P., Thimmappa, K., Poswal, R.S., Singh, R., Sharma, I. (2016). Sensitivity of rice-wheat system yields to climate change: Evidence from Haryana
- Rodrik, D. (2007) *One Economics, Many Recipes: Globalisation, Institution and Economic Growth*. Princeton University Press
- Sarker, A., Alam, K., Gow, J. (2012) A comparison of the effects of climate change on Aus, Aman and Boro rice yields in Bangladesh: evidence from panel data
- Verma, S., Sudan, F. (2021) Impact of Climate Change on Marginal and Small Farmers' Livelihood and their Adaptation Strategies-A Review

Exploring Sustainable Business Practices Integrated with Changing Technology: A Bibliometric Analysis

**Kinneri Jain¹, Associate Professor, Department of Commerce, Shri Ram College of
Commerce, University of Delhi**

**Vandana Jain², Associate Professor, Department of Commerce, Shri Ram College of
Commerce, University of Delhi**

Abstract

Sustainability is the most sought after objective to be achieved since the beginning of 21st century. In almost all realms of life and businesses, people have started diverting from traditional practices to sustainable practices, to create and deliver values for various stakeholders aligned with economic, environmental and social goals. Underpinning the sustainability perspective, the present research paper aims to discuss significant areas of research related to sustainable business coupled with emerging technology and also identifying future research directions in the area. The study aims to contribute to the literature by conducting bibliometric analysis of scientific papers from Scopus database published during 2014-2024 using VOSviewer software. The study aims to identify significant authors, journals, countries, institutes conducting research in sustainable business practices and emerging research trends related to sustainable business and technology. Our study reveals that significant progress in this research field took place from 2016, immediately after Sustainable Development Goals (SDGs) were adopted by UN. The analysis revealed that China is the leading country in terms of largest number of articles being produced and United Kingdom leads in terms of maximum citations. Bocken N.M.P has been the most cited author and Evans has been the most co-cited author. Our study shows that journal named Sustainability has published maximum articles in this area and the Journal of Cleaner Production has maximum citations.

¹ E-mail: kinneri24@gmail.com

² E-mail: drvandana.srcc@gmail.com

Keyword analysis reflects scope of work in the area of sustainable business integrated with topics like technology, culture, green technology, case studies, internet of things and supply chain management.

Keywords: Sustainable Business Practices, Technology, Bibliometric Analysis, VOSviewer, Scopus

1. Introduction

Sustainable Development Goals (SDGs) emerged popularly as a concept in 2016 after being adopted by member nations in 2015. The 17 SDGs primarily aim to sensitize and nurture human development through sustainable means to eradicate concurrent issues like poverty, inequality, while protecting the environment, improving health, justice and prosperity for all in all the countries. The ninth goal in particular talks about Industry, Innovation and Infrastructure which emphasizes the stakeholders should take into consideration social and ecological parameters along economic factors while taking any decision. Nowadays, significant number of companies is adopting sustainable business practices to leverage their sustainable performance thus contributing to SDGs and increase their competitive advantage (Porter and Kramer, 2011). The companies are motivated to change their management from traditional style to sustainable methods as it is imperative to find new ways in which there is integration of financial, environmental and social parameters in the business which lead to sustainable business performance. Nowadays, the stakeholders in companies take various decisions based on economic, social and ecological factors. As a result it becomes necessary for companies to transform their models from traditional to a sustainable business model. Use of technology cannot be undermined while identifying sustainable business. Numerous scientists have proved that sustainable business could not be realised without technology (Slintak *et al.*, 2018, Lopez-Cabarcos *et al.*, 2019 and Kirikkaleli and Ozun, 2019).

The present study seeks to analyze research data attributable to sustainable business and technology by conducting bibliometric analysis on sample of 436 articles drawn from Scopus database for a period of 10 years from 2014 to 2024 using VOSviewer bibliometric software tool. Bibliometric analysis is a great tool to identify visually what

are the evolving areas of research as it enables comprehensive assessment of items of a topic or a journal by analyzing the relevant literature (Wang *et al.*, 2022). Bibliometric analysis highlights current status, structure, influential authors, journals, countries and meaningful directions of a particular research field (Wang *et al.*, 2022 and Xu *et al.*, 2022). Useful information in context of area of research can be suitably identified by prudent bibliometric analysis leading to growth of the research field under study. In an attempt to draw meaningful conclusions, the study addresses the following research questions: first, what are the most influential authors, journals, institutions and countries with maximum work in the field of sustainable business practices integrated with technology?; second, to identify relevant research trends in the context of sustainable business practices integrated with technology; and third, to highlight future research directions in investigation of sustainable business practices integrated with technology.

The bibliometric study makes comprehensive assessment of the literature to assess performance in terms of number of publications and citations produced overtime (Alan and Koker, 2021; Farrukh *et al.*, 2022) along with making use of science mapping tools like co-citation analysis, co-occurrence analysis, bibliographic coupling, co-authorship and keyword analysis through network visualization for meaningful analysis (Aggarwal and Kumar, 2022).

1.1 Rationale for the Study

The paper seeks to understand the past, present and future of research in the field of sustainable business practices with proliferation of technology in the last decade when research gained momentum in this field especially after announcement of SDGs by United Nation in 2015. The enforcement of SDGs thus provoked researchers from multiple domains to undertake research in connecting fields discussing the flow of research in relation to sustainable business practices and technology. Future is going to be all about technology adoption, in order to sustain businesses it would become imperative to make use of technology for sound decision making as a responsible entity. This raises the need to adduce the current literature in the area and understand it better.

The paper is organised as follows: the present Section, Section 1 covers introduction and research objectives, Section 2 discusses the literature review while the third section demonstrates research methodology used in the paper, Section 4 highlights results of the bibliometric analysis, Section 5 discusses the future research trends, Section 6 highlights the limitations of the study, Section 7 briefly discusses the results of the study and Section 8 makes concluding remarks.

2. Literature Review

Kim M (2004) and Saeed et al. (2002) were the early researchers highlighting the significance of sustainable business models (Marczewska and Kostrzewski, 2020). Over the years there has been rise in work related to sustainable business but last decade saw substantial rise in work related to sustainable business. Bocken et al. (2014) were first to publish significant work on sustainable business models considering stakeholder interests from environmental and social perspective. They argued that to obtain competitive advantage business models should be aligned with social, environmental and economic factors in which a business operates. Geissdoerfer et al. (2018) produced a valuable review study on innovations in business model. They argued, how efficiently a company adapts and innovates business models would assess its resilience to frequent changes while providing sustainability. In study by Hajiheydari et al. (2019), sustainable business was proposed as the main research area which has contemporary significance given the social importance of sustainable, inclusive and technologically efficient business model to reach SDGs (2030 Agenda) adopted by United Nations member states in 2015 (GRI, 2015). The review paper of Evans et al. (2017) is a remarkable study which identifies that sustainable business models help businesses to achieve their goal of sustainability. According to Ludeke-Freund (2010) sustainable business model assists in achieving social and environmental sustainability in the industries. Innovative technology and industry 4.0 have emerged as prominent topics of research in the area, as integration of technology and business is crucial to achieve sustainability and produce economically meaningful systems to harness values for all the stakeholders. Despite much research on sustainable business there is a research gap in this mainstream that still needs to be addressed. Evaluation of performance of successful business in domain related to

technology needs to be researched. From this gap, stems the very initial need to analyze the research conducted in this field in recent years. Hence, this paper contributes to this research by making bibliometric analysis in the field of sustainable business and technology. Khan et al (2021) and Gupta et al (2021) in their study have analyzed that circular economy and sustainable businesses focusing on integration with technology are latest topics of research.

3. Methodology

The paper uses bibliometric analysis to conduct science mapping of literature related to sustainable business technology using VOSviewer software and Scopus database which contains millions of records. The Scopus database is an online social science database, having 20% more citation analysis than Web of Sciences and have wider journal coverage (Mongeon and Paul-Hus, 2016; Mishra *et al.*, 2021). Google scholar is not as credible as Scopus (Falagas *et al.*, 2008) hence, it has not been used. Bibliometric analysis provides an exhaustive map of scientific research consistent with recent developments (Anuar *et al.*, 2022 and Dabic *et al.*, 2020). It provides summary of extant scientific data to represent and establish the state of intellectual structure of a certain research topic (Donthu *et al.*, 2021). VOSviewer software was adopted as it allows three types of scientific maps such as network visualization, overlay visualization and density visualization (Van Eck and Waltman, 2010). It is possible to have practical and simple and superior comprehensions of large datasets in VOSviewer (Donthu *et al.*, 2021).

The search was conducted with keywords ‘Sustainable Business’ AND ‘Technology’. It was ensured that selected keywords were there in title, abstract or keywords of the articles for far-reaching research. Employing the first research criteria generated 1036 documents, limiting the search to the years 2014-2024 generated 836 documents. Only Articles were considered for the research work which further provided 472 documents. Since authors have proficiency in English so articles published only in English language were selected. This generated 463 articles. Articles published only in Journals refined the results to 459 and considering only final publication stage yielded 436 Articles at the conclusion of the

procedure of search. The concluded sample of 436 articles was used in CSV file format for the purpose of making suitable analysis by the software.

4. Results and discussions

The following section of the paper presents the main results of the research area. The search resulted in 436 records on the topic available in Scopus database. Performance analysis and science mapping were conducted for making suitable interpretations.

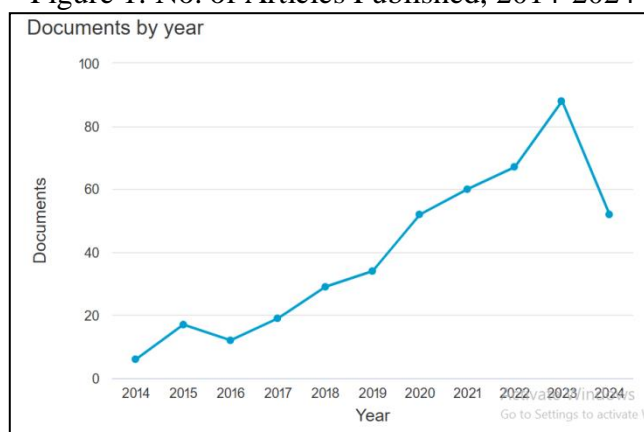
4.1 Performance Analysis

It helps to analyze the development and distribution of research topic from various statistical perspectives like number of publication related to the topic, number of citations, most active institutions and countries conducting research in the area (Bota-Avram, 2023).

4.1.1 Number of Publications related to Sustainable Business and Technology

Figure 1 provides information on documents published in this area in past decade. Rapid growth in number of papers being published can be seen from 2016 to 2024, when SDGs were announced by United Nation in the year 2016, research picked up momentum in this field with an increasing number of publications in this area. Publications till May 2024 have been included in the dataset. The interest in this field has risen sharply given the fact that many countries realize the need and importance of integrating, environmental, social and financial objectives in carrying out the business.

Figure 1: No. of Articles Published, 2014-2024

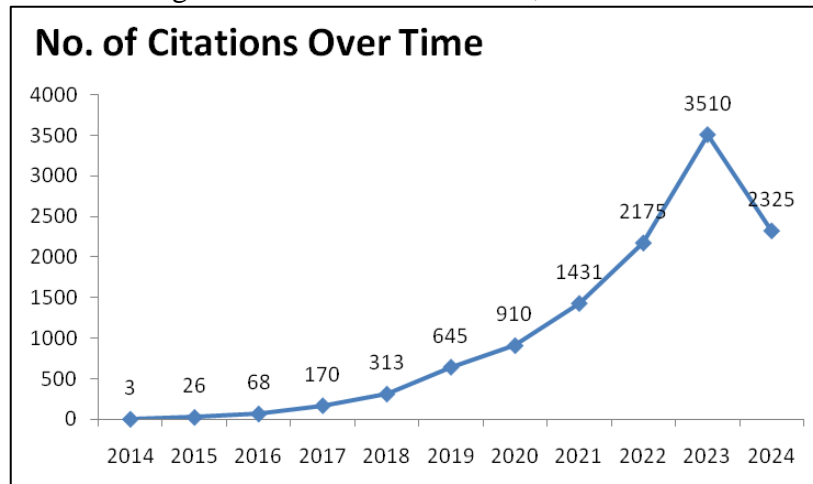


Source: Scopus database

4.1.2 Number of Citations Overtime

There is a sharp rise in number of citations of the publications in the past ten years as depicted in Figure 2. There has been a sharp increase from 2016 and the trend continues. Maximum citations (466) were accounted for the study conducted by Bocken et al. (2014) who advocated categorization of sustainable business model archetypes so that the research in this field could be broadened and unified (Bota-Avram, 2023). Significant citations (390) were received for paper by Fernando et al. (2019) related to relation between environmental innovation and sustainable business performance.

Figure 2: Number of Citations, 2014-2024



Source: Authors' compilation from the results

4.1.3 Countries Contributing to Research in Sustainable Business and Technology

Table 1 presents top 10 countries contributing to this research. China leads the research in the field in terms of number of documents whereas United Kingdom is producing the most cited research hence it is the leading country in category of citations followed by significant work from India, Italy and United States. Malaysia is also producing good quality research work reflected through its citations status. The analysis clearly indicates importance of sustainability and technology emphasized by these countries through their increasing research contribution.

Table 1: Top Ten Countries Contributing to Research in Sustainable Business and Technology

S. No.	Country	Documents	Citations	Average citation per item
1	China	54	1031	19.09
2	United Kingdom	42	2358	56.14
3	India	40	894	22.35
4	Italy	39	1503	38.54
5	United States	38	1238	32.58
6	Indonesia	23	465	20.22
7	Malaysia	22	1154	52.45
8	Spain	22	358	16.27
9	Germany	21	760	36.19
10	Taiwan	20	408	20.4

Source: Authors' compilation from the results

4.1.4 Journals Publishing Work on Sustainable Business and Technology

Table 2 highlights top 10 journals publishing work on sustainable business and technology. *Sustainability* journal has published maximum articles in this period followed by *Journal of Cleaner Production*, but looking at the citation of articles, the *Journal of Cleaner production* is the leading journal providing good quality papers which seem to be of academic interest to the researchers. Even *Management Decision* Journal, *Journal of Technological Forecasting and Social Change* and *Business Strategy and The Environment* Journal have good average citation per item reflecting the quality of articles published in these journals.

Table 2: Top 10 Sources of Publication related to Sustainable Business and Technology

S. No.	Source	Documents	Citations	Average citation per item
1	Sustainability (Switzerland)	76	1679	22.09
2	Journal of Cleaner Production	37	2905	78.51
3	Business Strategy and The Environment	12	289	24.08
4	Technological Forecasting and Social Change	7	258	36.85
5	Environmental Science and Pollution Research	6	103	17.16
6	Management Decision	6	256	42.66
8	Heliyon	5	24	4.8
9	Business Strategy and Development	4	1	0.25
10	Emerald Emerging Markets Case Studies	4	13	3.25

Source: Authors' compilation from the results

4.1.5 Highly Cited Authors in Sustainable Business and Technology

Table 3 lists the authors contributing meaningful literature in this field with Bocken leading with the highest number of citations (466), followed by Chiappetta Jabbour having second highest citations (435). Looking at average citation per item, authors like Fernando, Wah, Haseeb, Hussain, Jermittiparsert, Slusarczyk have contributed meaningful research work having interest to other authors. Their average citations are very high given that they have only one document each to their credit. This shows high quality of their research work.

Table 3: Top 10 Most Cited Authors

S. No.	Author	Documents	Citations	Average citation per item
1	Bocken, N.M.P.	2	466	233
2	Chiappetta Jabbour, Charbel Jose	2	435	217.5
3	Fernando, Yudi	1	390	390
4	Wah, Wen-Xin	1	390	390
5	Haseeb, Muhammad	1	336	336
6	Hussain, Hafezali Iqbal	1	336	336
7	Jermittiparsert, Kittisak	1	336	336
8	Ślusarczyk, Beata	1	336	336
9	Azapagic, Adisa	2	289	144.5
10	Mendoza, Joan Manuel F.	2	289	144.5

Source: Authors' compilation from the results

4.1.6 Institutions Contributing to Publications in Sustainable Business and Technology

Table 4 shows the 10 top most institutions which are conducting research in this area. It shows the total number of articles and citations of these top 10 institutions. Applied Social Sciences Department, Brazil, Belfer Center for Science and International Affairs, Harvard University, United States and Aalto University, Finland have significant citations of the work published. Table 4 reflects that not significant quantum of work has been done in the field, all the institutes have published single article, and hence there is scope for lot of research work in this area.

Table 4: Top 10 Institutions Producing Research in Sustainable Business and Technology

S. No.	Organization	Documents	Citations
1	Applied Social Sciences Department. Community University Of Chapeco Region, Brazil	1	112
2	Belfer Center For Science And International Affairs, John F. Kennedy School Of Government, Harvard University, United States	1	110
3	Aalto University, Finland	1	108
4	Antai College Of Economics And Management, Shanghai Jiao Tong University, Shanghai, China	1	71
5	Abu Dhabi University, United Arab Emirates	1	68
6	Agro-Know, 17 Grammou Str., Vrilissia, Athens, Greece	1	58
7	Alberta Children's Hospital, University Of Calgary, Canada	1	56
8	Bear Lab, Rabat Business School, UniversitéInternationale De Rabat, Morocco	1	47
9	Aalto University School Of Business, Finland	1	22
10	Aix Marseille Univ, Cnrs, Centrale, France	1	18

Source: Authors' compilation from the results

4.2 Science Mapping Analysis

The main purpose of science mapping analysis is to summarize the bibliometric structure of the research field (Donthu *et al.*, 2021) by using techniques like co-citation analysis, co-occurrence analysis, bibliographic coupling, and co-authorship analysis combined with network visualization. Graphic mapping methodology used in VOSviewer is an important methodology used in bibliometric analysis (Van Eck and Waltman, 2010). Visualisation in graph mapping is represented by a network of elements having different sizes of nodes. Size of the node varies according to the importance of a particular element, while the network connections represent how close the connector between the elements is (Marczewska and Kostrzewski, 2020). It allows us to depict and analyze the most representative connections between the elements that are related to the relevant research area.

4.2.1 Co-Citation Analysis of the Authors

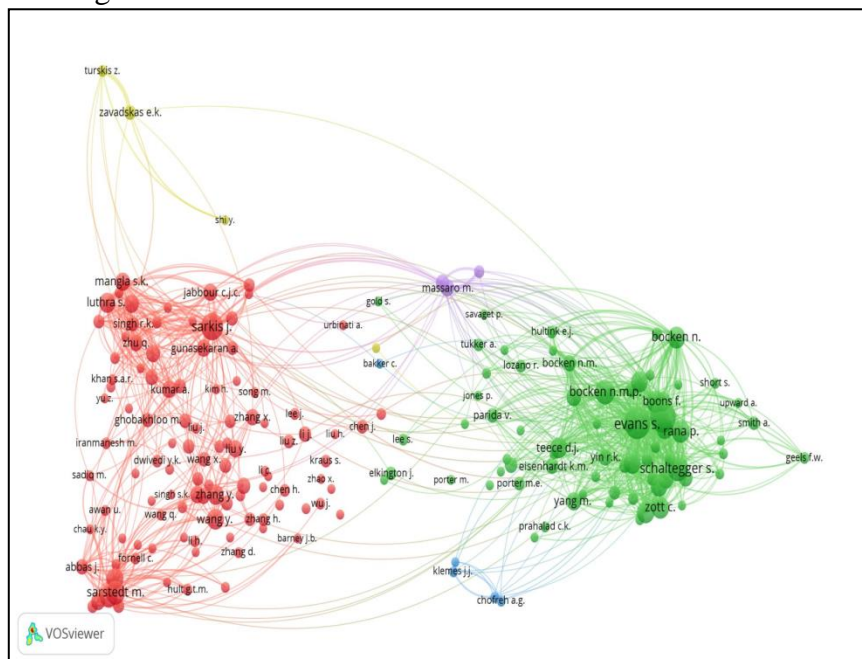
Co-citation analysis is performed to evaluate the similarity between documents, authors and Journals. It assumes that the more the two items are cited together, higher is the chance of their content being related to each other (Zupic and Cater, 2014). Co-citation analysis of authors allows for identification of authors that are co-cited by other authors (one author is cited by two other authors). Table 5 analyses the authors who have received the highest number of co-citations.

Table 5: Top 10 Authors with Maximum Citations

S. No.	Author	Citations
1	Evans S.	210
2	Ludeke-Freund F.	209
3	Sarkis J.	153
4	Schaltegger S.	132
5	Bocken N.M.P.	127
6	Sarstedt M.	117
7	Rana P.	106
8	Ringle C.M.	99
9	Bocken N.	98
10	Zott C.	97

Source: Authors' compilation from the results

Figure 3: Co-Citation Network of Researchers in the Field



Source: Authors' presentation based on VOSviewer Analysis

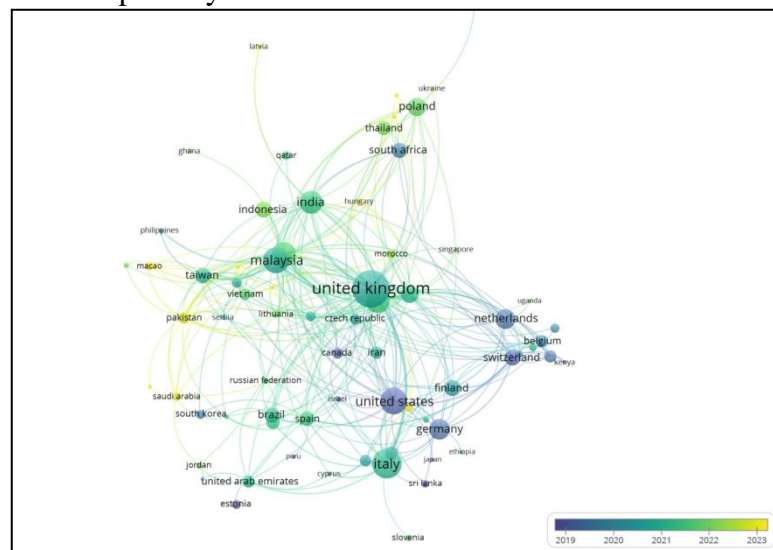
Figure 3 illustrates the network diagram. It represents that higher the number of citations received by an author the larger the diameter of a particular node. Larger node reflects higher number of citations received by an author. For our sample of 436 articles, 45,298 authors were identified. A minimum threshold of 20 citations of an author was considered, which contained 190 cited authors who met the threshold. Evans S. had the

highest number of citations (210). Ludeke-Freund F. is very near with 209 citations. Table 3 shows Bocken has 466 citations but co-citations are 225 (see Table 5).

4.2.2 Co-Authorship Analysis of Countries

Co-authorship analysis examines the intellectual collaboration between various countries based on number of articles produced or number of citations received. Co-authorship of countries was analyzed based on citations received, considering one as minimum number of documents per country. 84 countries were found to have met the threshold.

Figure 4: Co-authorship Analysis of Countries based on Number of Citations in the Field



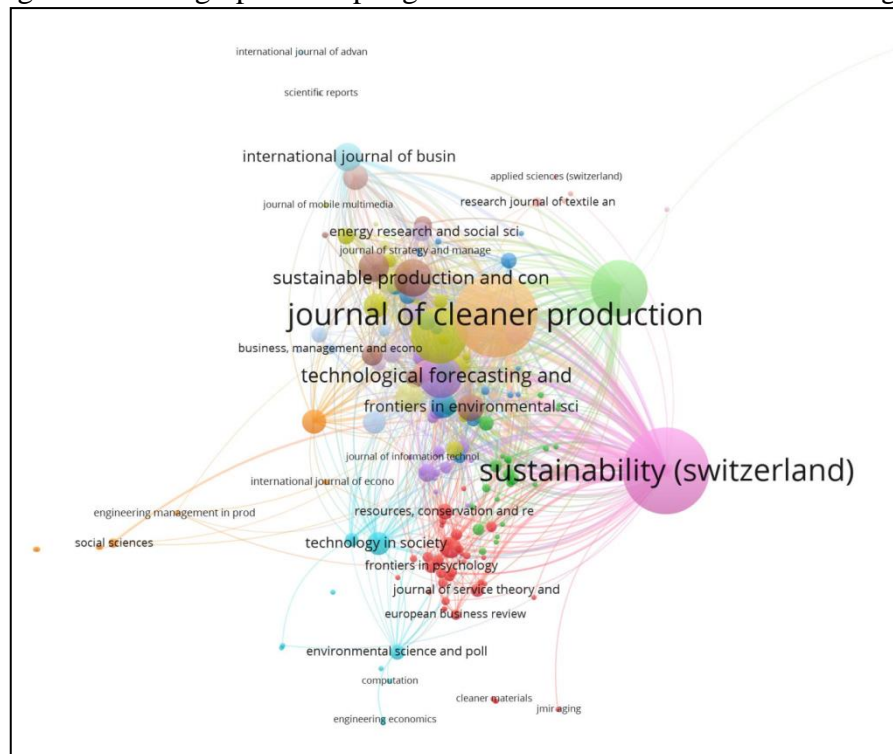
Source: Authors' presentation based on VOSviewer Analysis

Figure 4 presents the overlay visualization network of co-authorship by countries based on number of citations. The figure highlights that United Kingdom has maximum citations in this area followed by Italy, United States and Malaysia. The research work gained momentum from 2020 and shows an increasing trend thereafter. A strong network could be seen in research work between United Kingdom and Italy, United Kingdom and India, United States and Germany, United States and Switzerland, Malaysia and Indonesia, highlighting the prominence of these countries in undertaking research in this field.

4.2.3 Bibliographic Coupling Analysis

Bibliographic coupling takes place when a document is commonly cited by two other documents highlighting that they have a common topic (Caputo *et al.*, 2021). Bibliographic coupling of dataset was conducted to examine network positioning between various journals and authors.

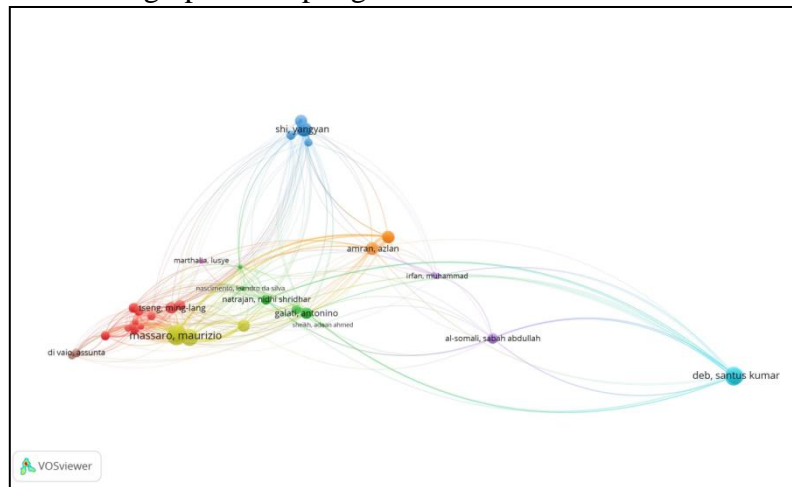
Figure 5: Bibliographic Coupling of Journals based on total link strength



Source: Authors' presentation based on VOSviewer Analysis

To make the bibliographic coupling analysis of journals, a minimum threshold of one document per journal and zero minimum number of citations of a journal were considered, 232 journals fulfilled the criteria. Figure 5 demonstrates the prominent journals in the research area. It is clearly evident that Sustainability and Journal of Cleaner Production are the pioneers in terms of research in the area outshining other journals. Strong linkages were seen between Sustainability Journal, Journal of Business Strategy and Environment and Journal of Cleaner Production.

Figure 6: Bibliographic Coupling of Authors based on total link strength



Source: Authors' presentation based on VOSviewer Analysis

To make the bibliographic coupling of authors, a minimum threshold of two documents per author and zero citations of an author, 48 authors fulfilled the criteria. Figure 6 presents the authors with highest bibliographic coupling link strengths signifying the valuable contribution of these authors in the area (Caputo et al., 2021). Massaro, Bagmoli, Dalmas, Deb.Santus Kumar, Naïf, Valeri and Shi Yang Yan were found to be most collaborative authors in this field of research.

4.2.4 Keyword Network Analysis

Keyword network analysis helps in developing conceptual structure by establishing relationship amongst the words used in the documents (Zupic and Cater, 2013). Keywords analysis is similar to content analysis which highlights connections between keywords from the given sample of publications. Considering a minimum threshold of five occurrences of a keyword, 47 articles met the threshold, which is presented below in Figure 7.

Table 6 exhibits keywords that occurred most frequently. The word Sustainability had 84 occurrences; and sustainable business models had 35 occurrences. Nearly similar number of occurrences was seen with circular economy (34), words like sustainable business model and industry 4.0 occurred 30 and 25 times respectively in the sample. To foster an

It is evident that studies on sustainable business and technology have evolved from older topic such as sustainable business models to more recent topics like innovation, block chain, digital transformation, industry 4.0, technology, artificial intelligence. Domains like digital transformation, artificial intelligence, technology, green technology, supply chain management, culture and internet of things show weak linkages with sustainability, pointing towards the future research areas for academia. This phenomenon emphasizes growing interest in the field of sustainability being researched together with inclusion of technology. As today, technology is leading humans in almost all areas like medicine, education, banking, retailing, service sector, production; it is quintessential that we integrate sustainable business and technology with corresponding research to obtain meaningful, effective and long lasting solutions.

5. Future Research Trends

The bibliometric analysis conducted in this study on various authors, journals, countries and institutes suggests emerging research trends in area of sustainable business integrated with technology, confirming that the research field is vital and of increasing interest to both academia and business. Sustainable business models are the largest stream of study suggesting an increasing academic interest in this field. The sustainability of businesses can be ensured only if traditional business models are reinstated considering social and environmental requirements. This concept of sustainable business model is now increasingly approached as a source of competitive advantage hence, it's pertinent to figure out suitable methods that lead to value creation. The circular business model approach focuses on environmentally viable solutions that aim to recycle and reuse renewable sources of energy, recognizing the limitations in planetary resources and energy use (Bocken *et al.*, 2014). Geissdoerfer et al (2018) proposed sustainable business model innovation as a process to reduce negative impacts and enhance positive effects on environment, society and stakeholders. Blockchain technology and industry 4.0 can provide competitive sustainable business practices by achieving security, traceability and non-manipulability of information (Mercuri *et al.*, 2021).

Some of the future research topics that could be explored further are as follows: (a) Relationship between green technology and sustainable business; (b) Significance of technology in promoting sustainable business in industries like healthcare, agriculture, manufacturing, energy, supply chain management and real estate; (c) Integration of sustainable business and technology and circular economy in various fields; (d) Case studies on companies adopting sustainable business in various sectors; (e) Theoretical conceptualization of relation between various cultures and sustainable business; (f) Identification of various approaches integrating sustainable business and internet of things; and (g) Comparative analysis of industries/countries adopting sustainable business practices.

6. Limitations of the Study

Although the study has employed extensive bibliometric analysis, still it has following limitations. One, the publications indexed only in Scopus were used for making analysis arguing that Scopus has 20 percent more citation analysis than web of sciences having wider journal coverage (Mongeon and Paul-Hus, 2016; Mishra *et al.*, 2021). Two, to have homogeneity, the study excluded books, chapters in books, conference papers, other reports. Three, quantitative analysis of the data rather than detailed qualitative content analysis is another limitation of the study. However, given the advantages of scientific map of research field provided by bibliometric analysis, it was pertinent to take it as the initial step.

7. Summary and Concluding Remarks

The results of bibliometric analysis show that there has been a significant increase in last decade in research related to sustainable business and its various domains. The number of articles rose sharply from the year 2016 immediately when SDGs were announced by United Nations and an ever increasing trend since then has been there with a steep rise in years 2019-2020 and 2022-2023. The number of citations also has been increasing since 2016 and maximum citations were received by Bocken N.M.P (466). China has produced

maximum articles (54) followed by United kingdom and India but considering average citation per article, United kingdom (2358) and Italy (1503) have produced qualitative work. Sustainability Journal has maximum articles (76) being double of articles published in Journal of Cleaner Production (37) which is second top journal. Analyzing average citation per article, Journal of Cleaner Production has 3 times more average citation per article (78.51) as compared to Sustainability Journal (22.09). Our study also revealed that Management Decisions Journal is an emerging leader with 42.66 average citations. Bocken, N.M.P and Chiapetta Jabbour have highest number of citations 466 and 435 respectively but Fernando Yudi and Wah, Haseeb, Hussain outshine in terms of average citation per document. University of Chapeco Brazil, Harvard University United States and Aalto University Finland have produced one article each in this area but citations of each reflect their significant contribution to research. Evans and Ludeke-Freund are most cited authors in terms of co-citation analysis of authors. Based on co-authorship analysis of countries, United Kingdom, Italy, United States and Malaysia have been prominent countries cited by researchers. In terms of bibliographic coupling Journal of Cleaner Production and Sustainability Journal have been cited the most and Massaro, Bagmoli, Dalmas were found to be most collaborative authors in the field. Co-occurrence of keywords reflects that greater quantum of work has been done on sustainability, sustainable business models, circular economy, industry 4.0, business model innovation but there is scope for further research in areas of technology, culture, green technology, supply chain management, internet of things and case studies in relation to sustainable business as weak linkages have been reflected by the study between them.

For decades, vital sustainability issues effecting environment and humans have not been the priority of most business models. Nevertheless, today business models are under pressure to achieve sustainable goals for their survival and to gain competitive advantage while maintaining productivity and profitability, thus creating value for triple bottom line namely economy, society and environment (Nosratabadi *et al.*, 2019). The study offers a visual image of the intellectual structure of knowledge related to sustainable business providing a comprehensive assessment of literature during the last decade. The main contribution of this study is to highlight emerging areas of research which can be integrated with research on sustainable business. Research on the various topics suggested by the study is an initial action for making meaningful sustainability decisions. This study

opens up new discussion for researchers, especially on the role of innovative technologies in sustainable performance of business, which requires further attention from business, academia as well as policy makers.

References

- Aggarwal, S., & Kumar, A. (2022). Dealing with a new normal 'e-leadership': A Study using bibliometric analysis and content analysis. *Vision*, 09722629221130592.
- Alan, H., & Köker, A. (2021). Structural social capital studies in management and organization literature: A bibliometric network study. *Central European Management Journal*, 29, 136-174.
- Anuar, A., Marwan, N. F., Smith, J., Siriyanun, S., & Sharif, A. (2022). Bibliometric analysis of immigration and environmental degradation: Evidence from past decades. *Environmental Science and Pollution Research International*, 29(9), 13729–13741.
- Bota-Avram, C. (2023). Bibliometric analysis of sustainable business performance: where are we going? A science map of the field. *Economic research-Ekonomska istraživanja*, 36(1), 2137-2176.
- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56.
- Caputo, A., Pizzi, S., Pellegrini, M., & Dabic, M. (2021). Digitalization and business models: Where are we going? A science map of the field. *Journal of Business Research*, 123, 489–501.
- Dabic, M., Maley, J., Dana, L.-P., Novak, I., Pellegrini, M. M., & Caputo, A. (2020). Pathways of SME internationalization: A bibliometric and systematic review. *Small Business Economics*, 55, 705–725.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296.
- Evans, S.; Vladimirova, D.; Holgado, M.; Van Fossen, K.; Yang, M.; Silva, E.A.; Barlow, C.Y.(2017). Business model innovation for sustainability: Towards a unified perspective for creation of sustainable business models. *Business. Strategy Environment*, 26, 597–608.
- Falagas, M.E., Pitsouni, E.I., Malietzis, G.A. and Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2), 338-342.
- Farrukh, M., Meng, F., Raza, A., & Wu, Y. (2023). Innovative work behaviour: the what, where, who, how and when. *Personnel Review*, 52(1), 74-98.
- Fernando, Y., Jabbour, C. J. C., & Wah, W. X. (2019). Pursuing green growth in technology firms through the connections between environmental innovation and sustainable business performance: does service capability matter?. *Resources, conservation and recycling*, 141, 8-20.

- Geissdoerfer, M.; Vladimirova, D.; Evans. (2018). S. Sustainable business model innovation: A review. *Journal of Cleaner Production*, 198, 401–416.
- GRI, UN Global Compact, WBCSD. SDG Compass. The Guide for Business Action on the SDGs. Available online: https://sdgcompass:wp-content/uploads/2015/12/019104_SDG_Compass_Guide_2015.pdf
- Gupta, H., Kumar, A., & Wasan, P. (2021). Industry 4.0, cleaner production, and circular economy: An integrative framework for evaluating the ethical and sustainable business performance of manufacturing organizations. *Journal of Cleaner Production*, 295, 126253.
- Hajiheydari, N.; Talafidaryani, M.; Khabiri, S.; Salehi, M. (2019) Business model analytics: Technically review business model research domain. *Foresight*, 21, 654–679.
- Khan, I. S., Ahmad, M. O., & Majava, J. (2021). Industry 4.0, and sustainable development: A systematic mapping of the triple bottom line, circular economy, and sustainable business models perspectives. *Journal of Cleaner Production*, 297, 126655.
- Kim, M. (2004). Strategies of Korean firms in china's high-tech market: Striving for a new and sustainable business model. *Global Economic Review*, 33(3), 61-75.
- Kirikkaleli, D., & Ozun, A. (2019). Innovation capacity, business sophistication and macroeconomic stability: Empirical evidence from OECD countries. *Journal of Business Economics and Management*, 20(2), 351-367.
- López-Cabarcos, M. Á., Srinivasan, S., Göttling-Oliveira-Monteiro, S., & Vázquez-Rodríguez, P. (2019). Tacit knowledge and firm performance relationship. The role of product innovation and the firm level capabilities. *Journal of Business Economics and Management*, 20(2), 330-350.
- Lüdeke-Freund, F. (2010). Towards a conceptual framework of ‘business models for sustainability’. In *Knowledge Collaboration & Learning for Sustainable Innovation*; Wever, R., Quist, J., Tukker, A., Woudstra, J., Boons, F., Beute, N., Eds.; SSRN: Delft, The Netherlands, 2010.
- Marczevska, M., & Kostrzewski, M. (2020). Sustainable business models: A bibliometric performance analysis. *Energies*, 13(22), 6062.
- Mercuri, F., della Corte, G., & Ricci, F. (2021). Blockchain technology and sustainable business models: A case study of Devoleum. *Sustainability*, 13(10), 5619.
- Mishra, M., Sudarsan, D., Santos, C.A.G., Mishra, S.K., Kar, D., Baral, K. and Pattnaik, N. (2021). An overview of research on natural resources and indigenous communities: a bibliometric analysis based on Scopus database (1979–2020). *Environmental Monitoring and Assessment*, 193 (2).
- Mongeon, P. and Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics*, 106(1), 213-228.
- Nosratabadi, S., Mosavi, A., Shamsirband, S., Zavadskas, E. K., Rakotonirainy, A., & Chau, K. W. (2019). Sustainable business models: A review. *Sustainability*, 11(6), 1663.
- Porter, M.E.; Kramer, M.R. (2011). Creating shared value. *Harvard Business Review*, 89, 62–77.
- Saeed, K. A., Hwang, Y., & Grover, V. (2002). Investigating the impact of web site value and advertising on firm performance in electronic commerce. *International Journal of Electronic Commerce*, 7(2), 119-141.

- Slinták, K., Briš, P., & Jurigová, Z. (2018). Innovative company: a story of Linet. *Journal of Security and Sustainability Issues*, 7(3), 535-550.
- Van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538.
- Wang, X., Qin, Y., Xu, Z., & Skare, M. (2022). A look at the focus shift in innovation literature due to Covid-19 pandemic. *Journal of Business Research*, 145, 1–20.
- Xu, Z., Ge, Z., Wang, X., & Skare, M. (2021). Bibliometric analysis of technology adoption literature published from 1997 to 2020. *Technological Forecasting and Social Change*, 170, 120896.
- Zupic, I., & Čater, T. (2014). Bibliometric methods in management and organization. *Organizational research methods*, 18(3), 429-472.

Book Review: Human Dignity and Social Justice

Author: Pablo Gilabert

Publisher: Oxford University Press

Year: 2023

ISBN: 9780192871152

Pages: 384, Price: £100 (Hardback)

Annabhula J C Bose¹, PhD, Department of Economics (Retd.)

Shri Ram College of Commerce, Delhi

In the book taken up for review here, the author is a philosophy professor and he mixes philosophy, the mother of all sciences, with economics and other social sciences. It needs to be studied by economics students and teachers who have tough time in conceptualising and operationalising what the ideal or good society is for everyone on planet earth. A major headache in this regard concerns prioritising efficiency or equality and resolving the so-called equity-efficiency trade-off, if at all it is there.

One thing is clear. Answer cannot be found without at least having a philosophy-economics connect in thinking. For example, the University of Arkansas rightly nudges the economics and philosophy undergrads that they need to get out of their respective silos and that only through such a connect they can acquire a greater capacity to explore answers to questions like the following: “How can we make rational decisions? What is happiness, and how can people achieve it? How should we weigh the costs and benefits of laws, policies, and regulatory systems? What are the relative values of equality and economic efficiency, and how should we make trade-offs

¹ Email: ajc.bose@srcc.du.ac.in

between them? What is the nature of justice, and is it ever permissible to act unjustly? What is the proper scope of the free market system? Are there some things that should never be for sale?”

Because most economics students pursue non-ethical economics, i.e. economics sans philosophical underpinnings of their multicultural backgrounds, like in Delhi University for example, they are fish out of water in making sense of and choosing from competing perspectives of what constitutes an ideal or good society as presented by the heterodox economist, Saros (2019) as follows.

Plato’s ideal society is ruled by philosopher-kings because philosophers are the wisest members of society. There is no democracy. There is a strict social hierarchy in terms of a warrior class and a class of slaves below the philosopher class. In the Thomas More’s Christian perspective of ideal society, people rotate living in the city and in the countryside. The economy is based on communally owned property. Necessities are freely distributed. There is a six-hour workday. Slaves perform the least pleasant work. Non-slaves are free most of the day to enjoy socializing with one another and learn about new subjects. Mahatma Gandhi’s good society, from the Hindu background, has economic self-sufficiency, protectionism for local economies, and the avoidance of materialism. The worst-off members of society are elevated in the pursuit of greater equality and a sense of brotherhood. According to the Islamic economists, the ideal society is ruled by theocratic governments adhering to Islamic law as set forth in the Quran and the Hadith. They enforce profit sharing, prohibition on the payment of interest, proper consumption that excludes the consumption of alcohol and pork, a wealth tax for redistribution to the poor, the avoidance of uncertainty like in gambling, and a belief in universal brotherhood. For Ayn Rand, who

has glorified individualism, market capitalism is the ideal society wherein the right to life and the right to property are sacrosanct. They are protected by the state. “Each individual has a right to do with his or her life or property whatever he or she wishes, provided he or she does not interfere with anyone else’s rights.” There is voluntary exchange of property. The neoclassical economists too idealise market capitalism as the one that obtains the most advantages with the least use of resources. In other words, economic efficiency is achieved by “full employment of resources in the least cost manner to produce combination of goods and services that consumers most desire. Competition between numerous buyers and sellers of privately owned property will automatically lead, as if by an invisible hand, to the economically efficient outcome”, statically and dynamically. For Karl Marx and Marxists, the ideal society is socialism and ultimately communism. Market capitalism is exploitative. The capitalist class exploits the working class. The latter will eventually establish a society in which working people own the means of production in common and all class distinctions are abolished. “Workers would be compensated according to their work and would contribute to production as they are able” under socialism. Later under communism, “workers would be compensated according to their need and would contribute to production as they are able”.

In this backdrop, there are two singular points of departure for drafting this book review on ideal or good society characterised by common good rooted in the notions of human dignity and social justice.

First, as underlined by the Markkula Centre for Applied Ethics at Santa Clara University, the quest to create "the good society," "where the common good is the pursuit of the good in common" remains a mirage because, “A ruthless individualism, expressed primarily through a market mentality, has

invaded every sphere of our lives, undermining those institutions, such as the family or the university, that have traditionally functioned as foci of collective purposes, history, and culture. This lack of common purpose and concern for the common good bodes ill for a people claiming to be a democracy. Caught up in our private pursuits, we allow the workings of our major institutions -- the economy and government -- to go on "over our heads."... powerful forces affecting the lives of all of us are not operating under the norm of democratic consent. In particular, the private governments of the great corporations make decisions on the basis of their own advantage, not of the public good. The (federal/central) government has enormously increased its power, especially in the form of the military industrial complex, in ways that are almost invulnerable to citizen knowledge, much less control, on the grounds of national defence. The private rewards and the formal freedoms have obscured from us how much we have lost in genuine democratic control of the society we live in." We need "an informed and morally sensitive public active in discussing and debating issues ranging from international financing to day care, within a framework informed by a shared vision of a good society; and a citizenry capable of instituting reforms in our economic and political institutions so that they work for the common benefit of all peoples."

Second, according to *The Good Society* journal published by the Penn State University Press, "current versions of socialism and democratic capitalism fail to offer workable visions of a good society and seem increasingly to contradict such basic values as liberty, democracy, equality, and environmental sustainability."

Gilbert has resolved the problematic as posited above, by a marvellous integration of moral and political philosophies and economic ideas such as of

Kant and Marx. What has appealed to me the most in doing so is the argument that we can drop the typical Marxist view that Immanuel Kant as a dignitarian moralist and Karl Marx as a socialist-communist hostile to moral talk were on two different, non-intersecting roads. Gilabert has made the case that “we can articulate a Kantian conception of human dignity that helps to justify typically Marxian criticisms of capitalism as involving exploitation, domination, and alienation, and to develop the Marxian view of socialism as involving a combination of freedom and solidarity.”

In the typical Marxist view (Gasper, 2012), Kant and Marx do not see eye to eye, so to say. For Kant, “morality on a purely rational basis is required to control human impulses in order to prevent social conflict. The assumption underlying this view is that humans are competitive and seek their own self-interest and engage in a war of all against all if left to their own devices”. For Marx, “humans are not naturally competitive and violent. They are social creatures who cannot survive without cooperating with one another. Humans did not evolve as a collection of atomized individuals constantly at war with each other, but in social groups that depended on mutual support. It is only for the last 10,000 years or so, human society has been divided into antagonist classes wherein each class attempts to further its own interest by its own moral rules. Under capitalism, capitalist class morality is different from the working class morality. The latter becomes universal morality (morality in shared human nature) when the working class struggles to end exploitation and oppression and thereby represents in general the interests of all humanity.” Integral to this universal morality is what Marx in his 1859 essay, *A Contribution to the Critique of Political Economy*, had written thus: “Even an entire society, a nation, or all simultaneously existing societies taken together, are not the owners of the earth. They are simply its possessors, its beneficiaries, and have to bequeath it in an improved state to

succeeding generations as *bonipatres familias* (good heads of the household)”.

Williams (2017) has sensibly argued that it is better to first see the common themes between Kant and Marx and recognise then the differences between the two therein. Both had admirable commitment to “critique, freedom (however differently defined), equality, human betterment and cosmopolitanism.” Both had “a progressive view of history as the expansion of human freedom; both praised self-determination and abhorred paternalism; both called for interpersonal and institutional arrangements in which people treated each other as ends and not merely as means; and both had a cosmopolitan view of the scope of the project of human emancipation.” The points of difference to be noted, however, are that Kant rejected revolutionary politics and supported top-down reform and justified religion in terms of morality based duty-performance as adhering to divine obligations.

Gilabert (2023) has advanced the discussion by an excellent transcendental synthesis of Kant and Marx to put forward ‘dignitarian socialism’ as the ideal or good society.

The idea of human dignity is the heart of Kant’s moral outlook. “Every human has equal dignity, according to Kant. What does this mean? We should always respect the humanity in others and we should only act in accordance with rules that should hold for everyone. This moral law is a truth of reason and hence all rational agents are bound by it. But in saying so, Kant had a narrow basis for human dignity in terms of an insufficient appreciation of some material and social aspects of human flourishing. For example, the problem with Kant is that although he claimed that in a just society people would have equal formal opportunities to compete for

economic advantages instead of being inescapably destined to certain positions such as lords or serfs, or masters and slaves, he also took the society to allow for greater inequalities regarding income, wealth, and other economic advantages.”Dignity for all cannot materialise in a society of deep structural inequalities and injustices.

By drawing on insights from Marx’s work, Kant’s narrow dignitarian account can be broadened by rooting it in socialist transformation of a capitalist society. A key idea of Marx is that socialism as the alternative to capitalism as a class society would instantiate the slogan “from each according to their abilities, to each according to their needs”. This is the abilities/needs principle of restructuring economy and society. This can be understood as “an elaboration of the dignitarian idea of solidaristic empowerment. This means that there are effective opportunities for productive activity involving self-realization rather than alienation. There is a social ethos and institutions articulating positive duties to produce to meet people’s basic needs. There is also an ethos and a scheme of distribution to access to consumption goods that recognises a responsibility to cooperate in production in terms of fair reciprocity. People also pursue their wellbeing in ways appropriate to their singular characteristics, by making their own choices concerning self-realization, consumption, and leisure.”

The abilities/needs principle helps “envision an economy of mutual affirmation amongst all producers and consumers. It is emancipatory because people are given real opportunities to engage in non-exploitative, non-dominating labour. The shaping of the economy would be subject to democratic authorization and contestation. Enjoying robust political liberties, people could collectively assess and reform economic arrangements. People confront and overcome scarcity by having opportunities to work in ways that

engage rather than stunt their valuable capacities for free and cooperative production. The dignity of the people is preserved by supporting their pursuit of a wellbeing involving the development and exercise of their valuable human capacities. There is no paternalism. Marx was hostile to developing blueprints for how socialist transformation should proceed.”

Radical democracy and self-emancipation are interlinked. “Under capitalism, what is presented in terms of ideology as being in the general interest of all in fact only serves the particular interest of the dominant class. But in socialist politics as a radical democracy, it is not so. People engage in public debate to figure out together what the idea of the social contract would really amount to for them, and decide by themselves what to do about social and economic justice.”

This broadened dignitarian approach to good society is a blaze of light to overcome all the hitherto dark, negative energies of the Left praxis.

April 22 and May 5 of 2024 marked the 300th and 206th birth anniversaries of Immanuel Kant and Karl Marx respectively. To me, reading Pablo Gilabert along with Howard Williams has, thus, been a satisfying, refreshing and ennobling integrative interface with both Kant and Marx as moral and political philosophers very much relevant for our turbulent times, in order to seek definitive redemption from the bad society of things falling apart for the majority of people in the hegemonic global neoliberal order of the past four decades.

Given that economists prefer to sidestep moral issues and now that Nobel laureate Angus Deaton has told them to return to ethics and think about what constitutes human wellbeing (Taylor, 2014; Deaton, 2024), reading this book is topical as also very useful.

References

- Deaton, Angus (2024). Rethinking My Economics. *Finance & Development*. March. International Monetary Fund
- Gasper, Phil 2012, Marxism, Morality and Human Nature, *International Socialist Review*, Issue 82, March.
- Saros, Daniel E. (2019), Principles of Political Economy, Valparaiso University.
- Taylor, Timothy (2014). Economics and Morality. *Finance & Development*. June. International Monetary Fund.
- Williams, Howard (2017), The Political Philosophies of Kant and Marx. *Kantian Review*, 22 (4).

Bird's eye view on GST collection during Covid

Aashi Jain¹, Student, National Law University and Judicial Academy, Assam

Abstract

Indian tax system has gone lot of changes over time. One major change is the introduction of Goods and Services Taxes (GST). This paper tries to unfold the changes in the GST collection pre and post Covid, and the factors that affected the collection of GST. Covid and the complete lockdown associated with it, led to disruptions of operations of the businesses, and hence made the payment of taxes difficult. Drawing information from secondary data sources, this review article provides a comparative analysis of the collection of GST pre and post Covid.

Keywords: GST, Covid-19, Indian economy, Taxes, Government

1. Introduction

India witnessed a change in its tax system with the introduction of Goods and Services Taxes (GST) on July 1, 2017 with a special amendment in Article 366 (12A) of the Constitutional (101st Amendment) Act, 2016. This act defines Goods and Services Tax as “any tax on supply of goods, or services or both, except for taxes on the supply of the alcoholic liquor for human consumption”.

In other words, the Goods and Services Tax (GST) is a Value Added tax (VAT) that is kept on various goods and services. GST is the tax that is borne by the consumers but is paid to the government by the business enterprises or the sellers.²

GST is an indirect sales tax that is levied on the cost of goods and services. The business enterprises add the GST on the cost of goods and services which is then sold to the

¹ Email: aashi21@nluassam.ac.in

² Goods and Services Tax (GST): Definition, Types, and How It's Calculated, Investopedia <https://www.investopedia.com/terms/g/gst.asp> (last visited April 20, 2023)

customers, who pay the price inclusive of the GST. It is also referred to as the Value Added tax (VAT)³ in some countries.

Some countries like New Zealand and Australia have a single unified GST which means that a single tax system is followed in the entire country. In other words, a country having a unified GST merges the central tax (i.e. excise duty, sales tax, service tax etc.) and the state level taxes (i.e. entertainment tax, luxury tax, transfer tax etc.) and levies them as a single tax. Such countries tax at a single rate.⁴

In India, through the removal of taxes across the country, GST has created “One Nation, One Tax, One Market”.⁵ The GST has eliminated state-to-state tax barriers, resulting in the creation of a single national market. The GST will guarantee unrestricted trade between states, as the current interstate tax system was somewhat flawed. The removal of several checkpoints and the consolidation of warehouses will be the main drivers of the decreased logistics costs resulting from the reduction in transit time. This might drastically cut down on hold-ups and delays, which would change the economy's productivity.⁶

With the removal of various taxes, GST is expected to bring in more efficiency in the Indian tax system. It will have two main advantages: one, an improvement in the competitiveness of the domestic sector, hence fulfilling the “Make in India” initiative, and two, improving India’s rank in the “Ease of doing Business”.⁷

However, with the onset of Covid, the entire world has to deal with economic complexities, India was not an exception. It has affected almost all the sectors and also GST collections in various states, as many business outlets were shut, payment of taxes became a burden.

Given this background, this paper studies the impact of Covid on GST collections, and tries to analyse state of GST collections pre Covid and post Covid times.

³ Ibid.

⁴ Ibid.

⁵ Rashesh Shah, GST: A unified India for business, mint
<https://www.livemint.com/Opinion/JBrZWYtutXfzM9r8aQvdzJ/GST-a-unified-India-for-business.html>
(accessed in April, 2024)

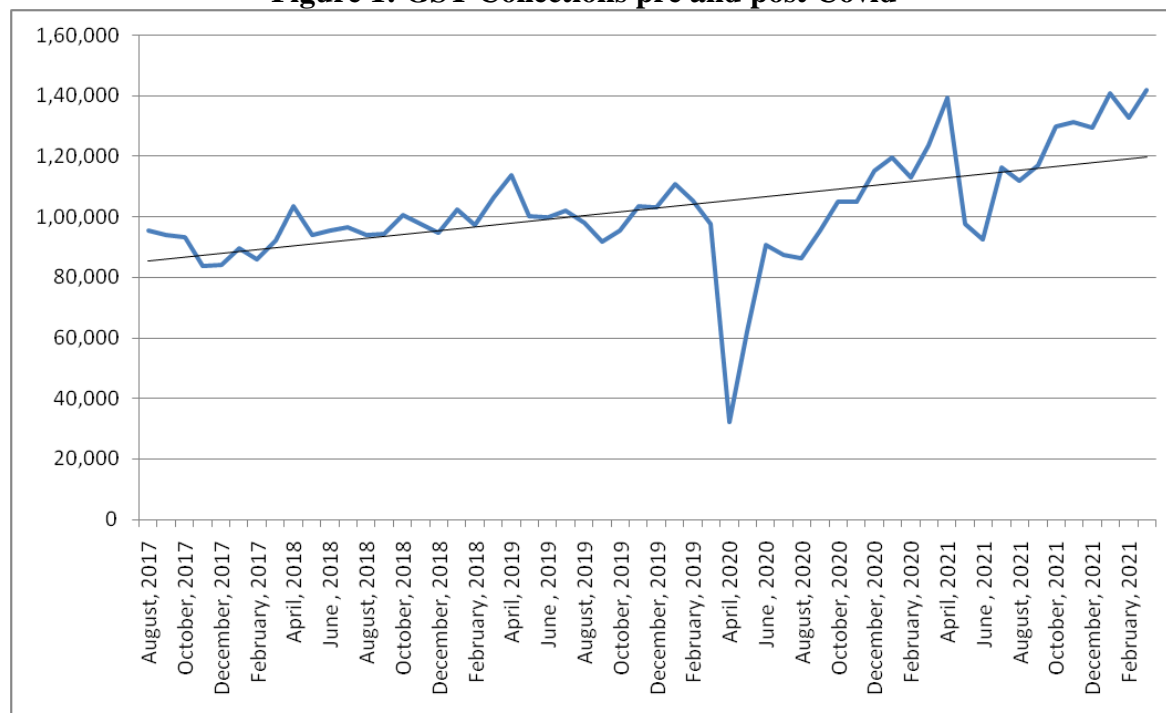
⁶ Ibid.

⁷ Ibid.

2. GST Collection

Figure 1 gives the GST collections pre and post Covid, the data relating to the monthly collection of GST from FY 2017-18 to FY 2021-22.

Figure 1: GST Collections pre and post Covid



Source: The figures are based on the GST Council of India <http://gstcouncil.gov.in/gst-revenue>⁸. Figures are in Crores

Figure 1 shows the GST collections on a monthly basis in crores, for the FY 2017-18 to FY 2021-22. The figures of 2017-18 data show us that the GST collections were low as compared to 2019-20 or 2021-22. Though the GST regime made things simpler, which means the business didn't had to maintain track records for various taxes as there had been an implementation of a single tax throughout the country, yet GST came with its own challenges. Small, micro and medium enterprises (MSME's)⁹ had to suffer a lot, as they had to transit themselves to an entire new system. Hiring of experienced accountants like the Chartered Accountants became an added expenditure for the enterprises; hence, the GST collected during this time was low.

⁸ Accessed on April 20, 2023

⁹ Dr. Arundhati Roy, Biswa Bhusan (2020) *Pal Ach's Journal of Archaeology of Egypt/Egyptology*, Impact of Covid-19 on Goods And Services Tax (GST) with respect to Micro Small And Medium Enterprises (MSME) Sector.

It is considered that the Covid had its impacts from the month of March 2020, during this month only the government had announced lockdown in the country as this was the time when Covid cases were being recorded in India. From the table above we can see that the GST that has been collected in the month of March 2020 is lower as compared to other months.

In the month of April 2020, we see a major drop in the GST collections as compared to all the years and months. Some improvement and hope has been in the month of December 2020 when India was slowly recovering from the Covid grasp, however the lowest GST collected till date has been the month of April 2020. Though the collection was the lowest but then thereafter GST collection went on to increase and improve in the later months. During this time many of the business operations went on to become digital and had online operations during these times. People became comfortable to work in such an environment.¹⁰ This was the beginning of a new era and hence even the GST went on increasing. In addition, the festive season of Diwali in November, relaxation in lockdown rules and decrease in Covid cases also led to an increment in GST.

From April 2021, GST started to improve and increase, it was even more than the pre-Covid times. India was now recovering from the pandemic and the nationwide lockdown which had a devastating impact on the economy and also on the GST collections. The improvement in the GST collection of 2021-22 shows us that there has been a sustained growth in the economic recovery from September 2021 till date.

Thus, despite the darkness, there has been light in the coming months where there has been some improvement in the state of economy and hence the GST collection.

3. Conclusion

Covid was an inevitable event and a force majeure, which could not be stopped. It had a devastating impact on the Indian economy but the country through its potential did a commendable job in preventing its impact as can also be seen that in the recent months

¹⁰ Dr. Selvi S, Retrekar Aishwarya Gururaj (2022), *A study on the impact of Covid 19 on the GST collection*, Vol. 9, Issue 1, *International Journal Of Recent Research In Commerce Economics And Management (IJRRCEM)*

after the Covid where due to digitalisation people got comfortable with the system and hence the collection of GST increased. This shows that the system has revitalized.

References

- Ram Kumar Sankhala, Tanuja Rathore, (2022), “Analysis Of Covid-19 Effect on GST Collection in India”, Volume 05, No. 03(II), *International Journal of Advanced Research in Commerce, Management & Social Science* (IJARCMSS).
- Dr. Arundhati Roy, Biswa Bhusan (2020), “Impact of Covid-19 on Goods And Services Tax (GST) with respect to Micro Small And Medium Enterprises (MSME) Sector”, Vol. 17, *Pal Ach’s Journal of Archaeology of Egypt / Egyptology*.
- Dr. Selvi S, Retrekar Aishwarya Gururaj (2022), “A study on the impact of Covid 19 on the GST collection”, Vol. 9, Issue 1, *International Journal Of Recent Research In Commerce Economics And Management* (IJRRCEM)
- Goswami, Avinash & Srivastava, Ritika & Joshi, Dr. (2020). Comparative Analysis of Pre & Post Impact of Covid19 on GST Collection: Critical Analysis on Indian Economy, Vol. 10, Issue 7, Research Gate
- Rashesh Shah, GST: A unified India for business, <https://www.livemint.com/Opinion/JBrZWYtutXfzM9r8aQvdzJ/GST-a-unified-India-for-business.html>.
- Chirag Patel R S, Impact of GST on centre state relation in India, IJLRA
- Govt unable to pay states’ GST compensation share: All you need to know, India Today <https://www.indiatoday.in/business/story/gst-comepensation-states-centre-unable-to-pay-explained-1706019-2020-07-30>.
- GST Collection data from FY 2017-18 to FY 2021-22 from Government of India GST statistics <http://gstcouncil.gov.in/gst-revenue> (last visited April 20, 2023).
- Goods and Services Tax (GST): Definition, Types, and How It's Calculated, Investopedia <https://www.investopedia.com/terms/g/gst.asp> (last visited April 20, 2023)
- Data Commons https://datacommons.org/place/country/IND?utm_medium=explore&mprop=amount&popt=EconomicActivity&cpv=activitySource%2CGrossDomesticProduction&hl=en (last visited April 21, 2023)
- The Hindu Business Line <https://www.thehindubusinessline.com/news/indias-exports-may-decline-in-2020-21-to-290-billion-rise-to-350-billion-next-fiscal-fieo/article33451847.ece> (last visited April 21, 2023)



Hansraj College University of Delhi

HRC JOURNAL OF ECONOMICS AND FINANCE

ISSN: 2583-8814 (Online)

CALL FOR PAPERS

Hansraj College, one of the premier institutions of University of Delhi, brings an opportunity for researchers around the globe to publish their research work in the journal of the college: HRC Journal of Economics and Finance

The *HRC Journal of Economics and Finance* is a **double-blind peer-reviewed academic journal** for students, researchers, and faculty, to showcase their research pertaining to the discipline of economics and business. It is an **International Journal**. Our mission is to provide a platform through which scholars can publish their scholarly findings to showcase them with the research community at large. We invite research papers and articles on topics related to the field of economics, business and management for its quarterly journal publication. The guidelines for the same are as follows:

Guidelines:

1. Authors can submit research papers, review articles, commentary, and book reviews
2. Papers can be related to the fields of economics, development, finance, management, law, health, education, gender, patents, trade, environment, and other related fields. These are indicative fields, and authors can submit any paper other than above mentioned fields.
3. The author will submit the paper in both word and pdf format. If the author is writing the paper in LaTeX, kindly submit the LaTeX file as well.
4. **Word Limit:** The maximum word count is up to 10000 words.
5. **Format:** The font size and style to be followed is 16 point for heading, 14 point for subheadings, 12 point for text and 10 for footnotes and Times New Roman respectively.



Hansraj College University of Delhi

Line spacing should be 1.5 for the text and 1 for the footnotes and endnotes. The name of the file should be in the format “FirstNameLastName- PaperTitle.”

6. All figures and tables should be embedded within the text. They should be labeled properly along with the source. Equations should be numbered.
7. The cover page should include the name of the author, name of institution, title, department, year of study (for students), contact number and email-id.
8. **Citation:** For the purpose of citations follow Chicago style referencing.
9. The Acknowledgements and Declarations section will be after the text of the manuscript and before the References section. The Declaration as applicable, on funding, conflict of interest, authors' contribution, data source, ethics approval etc. must be provided.
10. **Plagiarism:** Plagiarism of any kind is strictly prohibited and will lead to rejection of the entry. Limit of up to 10 percent is acceptable.
11. **Copyright:** Authors whose paper gets selected will be required to fill a copyright form to be sent separately to them.
12. Only original and unpublished entries will be considered for publication.
13. **Abstract:** Submissions must include an abstract of maximum 300 words, comprising of a brief description of the hypothesis, structure of the paper, research methodology and tools.
14. Citation of references in the text shall follow name and year in parentheses format. For eg. (Abbott 1991; Barakat et al. 1995; Kelso and Smith 1998; Medvec et al. 1999).
15. Different sections in the paper should be numbered in serial order. These include:
 - a. **Introduction:** A general overview of the research topic, its background and the question of the need for research in this field, are to be addressed in this section.
 - b. **Literature Review:** Aspects such as the evolution of theory/thought/responses to a topic and personal reaction or thoughts on the same are to be covered in this section. Additionally, critical analysis of existing literature on the research topic, with relevant references wherever applicable is expected to be included.
 - c. **Methodology:** Research methodology, techniques used, sampling methods, data sources and related aspects are to be included here.
 - d. **Results and Analysis:** The results of the paper, their analysis and interpretation are expected in this section.



Hansraj College University of Delhi

- e. **Conclusion:** This section should include the conclusion drawn from the research, together with relevant charts and tables. Topics such as limitations and scope for further research in the area too should find a mention here.
- f. **References:** A list of all works cited in the paper. Chicago style referencing format is to be followed.
- g. Reference list entries should be in alphabetic order by the last names of the first author of each work. Journal names and book titles should be italicized. For example:
 - i. **Journal article:** Battaglini, M., & Patacchini, E. (2018). Influencing Connected Legislators. *Journal of Political Economy*, 126(6), 2277–2322.
 - ii. **Article by DOI:** Duarte, A.A., Waechter, S.R., Pedrotti, M.F., et al., (2020) Microwave-Induced Combustion in Disposable Vessels: A Novel Perspective for Sample Digestion. *Analytical Chemistry*, <https://doi.org/10.1021/acs.analchem.0c01017>
 - iii. **Book:** Smith, T.M., & Smith, R.L. (2015). *Elements of Ecology*. Virginia: Pearson Press.
 - iv. **Book chapter:** Grainger, J., & Konkel, J. (2018). Flow Cytometry. In A. Hoffman and S. Clokie (Ed.), *Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology* (pp. 287-312). Cambridge: Cambridge University Press.
 - v. **Online document:** Utkina, I. (2020). Traditional bamboo cultivation system in the Republic of Korea earns place on global agricultural heritage sites list. News. Food and Agriculture Organization of United Nations. <http://www.fao.org/news/story/en/item/1295510/icode/> (accessed 26 June 2020).

The deadline for submission of articles and papers is 15th of every month.

All the submissions will be done by emailing the paper to editor.jef@hrc.du.ac.in

Website: [Hansraj College, University of Delhi](http://www.hansrajcollege.edu.in)



Hansraj College University of Delhi

We expect the authors to wait at least one month from their submission to hear from the editors.

All the submissions have to be in English. However, submissions in other official Indian languages are also accepted. Once accepted, these submissions will be published in a special issue of the journal.

In case of any queries, please send an email to editor.jef@hrc.du.ac.in

Ethic Policy:

HRC Journal of Economics and Finance team aims to bring high quality content with the utmost transparency and clearest ethical behavior as possible. Nearly each attribute of this process involves important ethical principles and decisions, which are seldom explicitly stated and even less often shared with the readership. Journal's reputations depend on the trust of readers, authors, researchers, reviewers, editors, research subjects, funding agencies, regulatory agencies & administrators. This trust is enhanced by describing as explicitly as possible the journal's policies to ensure the ethical treatment of all participants in the publication process. For authors, the journal has the policy that the submitted work has not been published before (except in the form of an abstract or as part of a published lecture, review or thesis). The work is not under consideration elsewhere. The copyright has not been breached in seeking its publication. The publication has been approved by all co-authors and responsible authorities at the institute or organization where the work has been carried out.

No Publication/ Processing Fee

HRC Journal of Economics and Finance, being a non-profit Journal, does NOT charge publication/ processing fees from Author(s).

Patron:
Prof. (Dr.) Rama
Principal
Hansraj College

Editor In-Chief:
Dr. Apoorva Gupta



HANSRAJ COLLEGE UNIVERSITY OF DELHI



HRC JOURNAL OF ECONOMICS AND FINANCE

ISSN: 2583-8814 (Online)

CALL FOR PAPERS

The *HRC Journal of Economics and Finance* is a **double-blind peer-reviewed academic journal** for students, researchers, and faculty to showcase their research pertaining to the discipline of economics and business. It is an **International Journal**. Our mission is to provide a platform through which scholars can publish their scholarly findings to showcase them with the research community at large. This is a **quarterly journal**.

The Editorial Board of the journal invites research papers and articles on topics related to the field of economics, development, law, business, finance, trade, environment, management and allied fields.

Deadline for submission of papers for Volume 3, Issue 1 (Jan-March, 2025): **Jan 15, 2025**

For more details, [click here](#)