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UNIVERSITY OF CALCUTTA



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Editorial

'Business Studies', a UGC-CARE listed, double-blind, peer-reviewed and refereed journal of the Commerce Department, Calcutta University, is a collection of articles that embodies both qualitative and quantitative research in the field of finance, accounting, taxation, marketing, entrepreneurship, socio-economic, philanthropic, and other allied areas of management within the periphery of commerce and business. Accordingly, this first issue of 46th volume of *Business Studies* puts forth before the readers five insightful papers on diverse micro and macro issues such as effect of goods and service tax (GST) on Indian FMCG sector, state of health of Indian jute industry, opportunities in food processing industry, self-help group (SHG) participation among Muslim community of West Bengal, to corporate social responsibility (CSR) compliance of Indian companies in alignment with sustainable development goals (SDGs). The papers have been arranged in view of the perceived link in their contents so as to retain the universal appeal of the research volume. The first paper evaluates the state-wise distribution of CSR contributions in India and allocation of CSR funds to different sectors in alignment with SDGs, to highlight significant regional disparities and underscore the need for balanced CSR allocation and strategic alignment with India's development priorities. In the second paper, the authors investigate the effects of GST on the Indian FMCG sector using advanced econometric tools and infers that FMCG sector benefited from cost savings and possible increased profit margins brought about by the reduced tax burden, though the implementation of GST caused considerable disruptions to supply chains having a detrimental effect on its stock performance. In an exploratory study, the third paper revisits Indian jute industry's history and experiences to understand its relevance in modern times, evaluates current innovations and experiments, future expectations and prospects, and identifies critical success factors to ensure its long-term sustainability. The fourth paper empirically analyses the performance and opportunities of food processing industry in West Bengal and makes some insightful recommendations to harness its full potential in future, given its capability to reduce agricultural waste, increase employment opportunities and double farmers' income by linking agriculture and industry, extend shelf life of food products, and attract sizable amount of Foreign Direct Investment (FDI). In an interesting study, the fifth and final paper examines the factors motivating Muslim women to participate in self-help groups (SHGs) and compares them with those of the non-Muslim community using Principal Component Analysis (PCA), and finds that Self-Development, Access to Market and Self-Esteem are their main motivators for joining SHGs.

We sincerely hope that all the articles published in this edition of the Departmental journal will be of keen interest to our valued readers, and will enrich their knowledge base and stimulate their intellect. We would also encourage you to participate in the ongoing debate on the above and other related research themes in the field of accounting, finance, taxation, economics, environmental sustainability and management by contributing your research work to this journal.

Prof. Tanupa Chakraborty
Editor, Business Studies

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Corporate Social Responsibility Compliance among Indian Corporates and its Alignment with Sustainable Development Goals: An Analytical Study

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Abstract

This study evaluates the state-wise distribution of Corporate Social Responsibility (CSR) contributions in India, assesses sectoral trends among NIFTY 50 companies, and examines compliance with CSR mandates. It highlights significant regional disparities, with industrial hubs attracting the majority of CSR funds, while less-developed regions remain underfunded. Sectoral analysis reveals a concentration of CSR efforts in education, health, and livelihood, aligned with SDGs 4, 3, and 8. However, critical areas like environmental conservation and gender equality receive limited attention. Utilizing statistical methods and secondary data, the study underscores the need for balanced CSR allocation and strategic alignment with India's development priorities.

Keywords: Corporate Social Responsibility (CSR), Sustainable Development Goals (SDGs), Regional Disparities, Sectoral Analysis, Compliance Trends

1. Introduction

Corporate Social Responsibility (CSR) refers to a company's commitment to conduct business in an economically, socially, and environmentally sustainable manner while addressing the interests of multiple stakeholders. CSR has also emerged as a strategic tool for businesses, enhancing competitiveness by improving brand identity, customer loyalty, and handling risks (Porter & Kramer, 2011). CSR exemplifies a company's commitment to conduct its business in a sustainable, ethical, and socially responsible manner, ensuring that it addresses the interests of various stakeholders (Carroll, 1999). More than legal compliance, it tries to integrate social, environmental, and ethical considerations into business operations. While profitability remains central to business success, the central idea of CSR sticks to the notion that corporations must contribute towards societal well-being and environmental preservation (Porter & Kramer, 2006).

In the recent past, CSR has become a significant component of Corporate Governance signifying the expanding role of businesses in addressing social and environmental challenges. CSR has gained significant traction in the Indian context by the introduction of the Companies Act, 2013, which mandates that corporate houses meeting specific financial thresholds to deploy 2% of their profits towards CSR activities (Ministry of

Corporate Affairs, 2013). Subsequent to legislation, Indian corporations significantly increased investments in sectors such as education, healthcare, environmental conservation, and community development (Gatti et al., 2019). However, despite the increase in CSR spending, the central point of discussion remains regarding the effectiveness of these spending in driving sustainable development outcomes.

This study tries to make a critical enquiry into alignment of corporate activities with the United Nations' Sustainable Development Goals (SDGs). Adopted in 2015, the SDGs provide a global framework to address critical issues such as poverty, inequality, climate change, and environmental degradation (United Nations, 2015). Companies seeking for long-term societal welfare and sustainable development align CSR initiatives with SDG. This study also aims to assess the compliance of Indian companies with CSR regulations and examine how closely these initiatives align with the SDGs. Furthermore, this study explores the gaps, opportunities and challenges in aligning CSR with United Nations Sustainable Development frameworks, offering ample insights for corporate houses, policymakers and stakeholders to enrich the impact of CSR initiatives.

2. Review of Literature and Research Gap

SDGs offer a structured framework for CSR, allowing corporates to align their social responsibility activities with global priorities (Pradhan & Ranjan, 2018). Maharashtra accounts for nearly one-third of all CSR funds in India, (Patel et al., 2021), where education, digital literacy, and healthcare (Chakraborty & Bhattacharya, 2020), urban infrastructure development, affordable housing, public transport and waste management (Bhatia & Gupta, 2020) and financial literacy initiatives (Shah & Joshi, 2019) assume significance. Industrial giants in Gujarat contribute to infrastructure, rural electrification and water conservation (Bhaduri & Selarka, 2020), skill training (Bhatt & Sharma, 2020), affordable and clean energy (Desai & Mehta, 2019; Khandelwal & Verma, 2019) and healthcare access in rural areas (Patel & Mehta, 2020). Karnataka, home to the IT capital Bengaluru, receives substantial CSR funding towards education, digital literacy and environmental conservation (Sharma & Reddy, 2018; Jain & Sharma, 2020; Kumar & Sharma, 2021) and rural electrification and smart agriculture (Dutta & Bhattacharya, 2021).

CSR funding in other states emphasis on education (Ahuja & Mehra, 2021; Srinivasan et al., 2020; Kumar & Rao, 2021; Chaudhary & Sood, 2021; Nanda & Prakash, 2019; Chand & Kumar, 2020; Bhattacharya & Das, 2023), women empowerment (Krishnan & Singh, 2021; Roy & Basu, 2021), vocational training (Ghosh & Chatterjee, 2019), road safety and community health (Subramanian & Ram, 2019), renewable energy projects (Deshmukh & Sharma, 2019; Shukla & Jain, 2020), sustainable manufacturing practices to reduce environmental impact (Tripathi & Yadav, 2021), rehabilitation and health (Chatterjee & Ghosh, 2018; Ganguly & Roy, 2019; Basu & Dutta, 2019; Vasudevan & Nair, 2021), skill development and livelihood enhancement (Bhattacharya & Mehra, 2019; Tandon & Verma, 2020; Chowdhury & Banerjee, 2020; Bansal & Kumar, 2021; Bedi & Kaur, 2020), sanitation (Mitra & Sinha, 2019; Ramesh & Balakrishnan, 2021; Raghavan & Thomas, 2019) and water management (Chakraborty & Paul, 2020; Singh & Yadav, 2018; Purohit & Kumar, 2021; Roy & Chakraborty, 2021; Sharma & Khanna, 2021), farmer education (Kaur & Singh, 2018; Mishra & Sahu, 2021; Reddy & Rao, 2019), reforestation (Kumar & Rao, 2020), healthcare (Sharma et al., 2020; Banerjee & Gupta, 2020; Ghosh & Sarkar, 2021; Thakur & Joshi, 2020), rural electrification and clean energy (Pandey & Verma, 2020; public private partnerships (Malhotra & Chawla, 2019), agriculture (Jha & Mishra, 2020; Agarwal S & Singh R, 2021), sustainable tourism (Goel & Kapoor, 2019) (Verma & Kumar, 2020), digital literacy (Nair & Subrahmanian, 2020), Infrastructure development (Agarwal P & Singh R, 2021; Das & Sarma (2020) and environmental conservation and biodiversity preservation (Mukherjee & Ghosh, 2020; Sinha and Roy, 2021; Sinha & Das, 2020)

Studies consistently show a concentration of CSR activities in industrialized states like Maharashtra, Karnataka, and Gujarat, while less industrialized regions such as Bihar, Uttar Pradesh, and the North-East

receive less attention (Chatterjee & Ghosh, 2018; Reddy & Rao, 2019). Besides, the industries heavily focus on urban areas and rural regions receive limited attention (Patel & Shah, 2021; Mukherjee & Sen, 2020; Kumar & Mishra, 2019).

While the Companies Act has increased CSR activity, compliance issues, particularly in smaller states, have limited the potential impact of CSR initiatives. Researchers argue for more robust monitoring and enforcement mechanisms to ensure wider distribution of CSR funds (Mukherjee & Sen, 2020; Bhatt & Sharma, 2020). Many studies highlight the lack of standardized methods for evaluating the long-term impact of CSR initiatives. This gap makes it difficult to assess whether state-wise contributions are making a meaningful difference in local communities (Sharma et al., 2020; Singh & Yadav, 2018) and successfully contributing to SDGs attainments. The present study attempts to fill this gap by analysing the linkage of CSR initiatives of Indian Corporates' in the attainment of SDGs proposed by UN. There is a lack of comprehensive research examining regional disparities in CSR distribution alongside sector-wise contributions, particularly among NIFTY 50 companies.

3. Research Methodology

This study examines CSR compliance among Indian corporates under Section 135(5) of the Companies Act, 2013, focusing on its alignment with Sustainable Development Goals (SDGs). It evaluates CSR contributions across states, sectoral allocations, and their impact on sustainable development. Specifically, the study seeks to: Examine disparities in the distribution of CSR funds across different regions in India. It further seeks to analyse sector-wise CSR contributions among NIFTY 50 companies and assess the level of CSR compliance among Indian corporates under the provisions of the Companies Act, 2013. Additionally, the study evaluates the alignment between CSR expenditure and the Sustainable Development Goals (SDGs), with particular emphasis on sectoral priorities and funding trends in India. The analysis covers the financial years 2016-17 to 2021-22, with state-wise comparisons and SDG rankings using data up to 2022-23. The current study adopts a descriptive and analytical research design to examine CSR compliance, distribution patterns, and alignment with Sustainable Development Goals (SDGs) in India.

An analytical approach is employed, utilizing secondary data from the official CSR portal (<https://www.csr.gov.in>) and company websites. Statistical tools such as averaging, standard deviation, coefficient of variation, correlation analysis, ranking, trend analysis, and percentage analysis are used to derive insights. The findings are presented through tables and charts for clarity. This research provides a comprehensive understanding of the variability in CSR compliance and its effectiveness in fostering societal welfare, offering valuable guidance for policymakers and stakeholders in shaping impactful CSR policies.

4. Analysis and Discussion

a. Disparities in CSR Distribution – Regional Skew

The state-wise CSR contribution rankings for the period 2017-22 reveal significant disparities in CSR fund allocation across India (**Table 1**). Maharashtra ranks first with the highest total CSR contribution of ₹20,838.34 crores, an average contribution of ₹4,167.67 crores, and a standard deviation of ₹1,164.46, indicating relatively consistent contributions with a low coefficient of variation (CV) of 27.94%. In contrast, Pan India (Other Centralized Funds) ranks second with a substantial CSR total of ₹9,001.22 crores but exhibits high variability, reflected in a CV of 55.78%, indicating centralized funds are subject to fluctuating contributions. Karnataka and Gujarat, ranked third and fourth, respectively, show moderate averages and standard deviations, with Karnataka demonstrating better consistency (CV: 21.27%) compared to Gujarat (CV: 28.98%). Tamil Nadu's low standard deviation and CV of 22.48% highlight stable contributions, earning it the fifth position. These

figures suggest that states with stronger industrial bases and CSR-friendly policies attract higher and steadier CSR allocations.

Table 1: State Wise CSR Contribution – Ranking

State	State/UT	Total CSR	Average	Standard Deviation	Coefficient of Variation (%)	Rank
Maharashtra	State	20,838.34	4,167.67	1164.46	27.94	1
Pan India (Other Centralized Funds)	Other	9,001.22	1,800.24	1004.17	55.78	2
Karnataka	State	7,806.13	1,561.23	332.15	21.27	3
Gujarat	State	7,140.04	1,428.01	413.88	28.98	4
Tamil Nadu	State	6,114.72	1,222.94	274.95	22.48	5
Delhi	State	4,979.56	995.91	330.53	33.19	6
Uttar Pradesh	State	4,497.45	899.49	354.60	39.42	7
Rajasthan	State	3,811.77	762.35	197.20	25.87	8
Andhra Pradesh	State	3,706.73	741.35	122.35	16.50	9
Odisha	State	3,651.27	730.25	153.44	21.01	10
Telangana	State	3,190.44	638.09	234.23	36.71	11
Haryana	State	2,846.71	569.34	129.63	22.77	12
West Bengal	State	2606.67	521.33	151.21	29.00	13
Madhya Pradesh	State	1,922.83	384.57	175.07	45.52	14
Chhattisgarh	State	1,645.59	329.12	164.12	49.87	15
Assam	State	1,551.38	310.28	124.84	40.24	16
Kerala	State	1,535.09	307.02	47.87	15.59	17
Jharkhand	State	1,073.21	214.64	106.40	49.57	18
Uttarakhand	State	986.74	197.35	68.86	34.89	19
Punjab	State	946.78	189.36	34.91	18.44	20
Bihar	State	739.66	147.93	56.66	38.30	21
Himachal Pradesh	State	542.59	108.52	30.31	27.93	22
Goa	State	236.19	47.24	6.37	13.49	23
Jammu And Kashmir	State	218.85	43.77	17.76	40.57	24
Arunachal Pradesh	State	185.93	37.19	46.27	124.42	25
Chandigarh	UT	109.95	21.99	16.36	74.41	26
Manipur	State	101.48	20.30	18.79	92.60	27
Sikkim	State	98.57	19.71	12.43	63.03	28
Meghalaya	State	93.19	18.64	2.06	11.05	29
Dadra And Nagar Haveli	UT	81.62	16.32	3.73	22.86	30
Tripura	State	76.91	15.38	6.07	39.43	31
Puducherry	UT	54.75	10.95	1.65	15.04	32
Nagaland	State	36.82	7.36	5.28	71.69	33
Daman And Diu	UT	34.58	6.92	2.45	35.40	34
Mizoram	State	19.27	3.85	4.90	127.15	35
Andaman And Nicobar	UT	17.20	3.44	3.61	104.80	36
Lakshadweep	UT	0.87	0.17	0.23	129.70	37

Source: National CSR Portal (<https://www.csr.gov.in>)

On the other end of the spectrum, states and Union Territories such as Lakshadweep, Mizoram, and Andaman & Nicobar Islands report minimal CSR contributions, averaging less than ₹5 crores, with extremely high coefficients of variation exceeding 100%. This indicates both low allocation and inconsistent funding patterns. States like Kerala and Punjab demonstrate notable stability in contributions, with Kerala achieving the lowest CV (15.59%), despite modest total CSR contributions. However, Union Territories like Chandigarh and Nagaland show highly erratic patterns, with coefficients of variation above 70%. These variations reflect disparities in economic development, corporate presence, and CSR implementation across regions, emphasizing the need for targeted strategies to ensure equitable CSR distribution and enhanced development in underfunded areas.

The concentration of CSR contributions among the top five states highlights the dominance of economically advanced regions in attracting corporate social responsibility funds. Together, Maharashtra, Karnataka, Gujarat, Tamil Nadu, and Delhi account for a total CSR contribution of ₹46,879.79 crores, representing 54.7% of the aggregate CSR expenditure across India. Maharashtra alone contributes ₹20,838.34 crores, which is 24.3% of the total CSR funds, underscoring its pre-eminence due to its robust industrial and corporate presence. Karnataka and Gujarat follow with contributions of ₹7,806.13 crores and ₹7,140.04 crores, respectively, collectively accounting for an additional 18.2%. Tamil Nadu and Delhi add ₹6,114.72 crores and ₹4,979.56 crores, respectively, together contributing another 13.6%. This heavy concentration indicates that top-performing states enjoy a disproportionately high share of CSR funds.

The regional skew in CSR funding reflects the industrial and corporate density in these states, with metropolitan cities like Mumbai, Bengaluru, and Delhi acting as corporate hubs. Additionally, these states have better governance frameworks and CSR-friendly policies that attract higher contributions. However, this concentration raises concerns about equitable development, as states with lower contributions, such as those in the northeast and certain Union Territories, remain underfunded. This disparity underscores the need for regulatory incentives or frameworks to encourage companies to allocate funds toward less-developed regions, thereby ensuring a more balanced approach to socio-economic development through CSR initiatives.

This study employed a hypothesis test to assess whether significant differences exist in the average CSR contributions across four regional zones of India: North, South, East, and West. The purpose of this analysis was to explore whether regional disparities in CSR practices are statistically significant, indicating distinct patterns of corporate engagement across different zones.

Hypotheses Formulated

- H_0 : There is no significant difference in the average CSR contributions across the North, South, East, and West zones.
- H_1 : There is at least one region where the average CSR contribution is significantly different from others.

At the 1% level of significance ($\alpha = 0.01$), the critical Chi-square value is 11.345. Since the calculated H-value (11.96885) is greater than the table value (11.345), the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This result indicates that at least one region exhibits a significantly different average CSR contribution, suggesting that CSR practices are not evenly distributed across the four zones.

The rejection of the null hypothesis highlights the presence of significant regional variation in CSR contributions. Several factors may account for these differences:

- Economic activity and industrial density: Regions with higher corporate presence, such as Maharashtra (West Zone) and Karnataka (South Zone), attract larger CSR investments.
- Policy frameworks and regional priorities: Differences in state-level policies and CSR initiatives may influence the consistency and magnitude of contributions across zones.
- Socioeconomic needs: Companies might allocate CSR funds strategically based on regional requirements, leading to variability across zones.

b. CSR Contributions Among NIFTY 50 Companies – Sector Wise Analysis

The analysis of the average CSR contributions of NIFTY 50 companies, based on a five-year average, provides valuable insights into corporate social responsibility trends among India's leading firms (**Table 2**). Reliance Industries Ltd ranks first, contributing the highest average CSR amount, followed closely by Tata Consultancy Services Ltd and HDFC Bank Ltd, demonstrating the significant focus these companies place on CSR initiatives. On the other hand, companies like Bajaj Finserv Ltd and Apollo Hospitals Enterprise Ltd are positioned at the lower end of the rankings, indicating relatively lower average contributions within the group.

The sector-wise CSR contributions of NIFTY 50 companies from 2017 to 2022 reveal significant variations, driven by the nature of industries and their profit dynamics. **Oil, Gas, and Consumable Fuels** lead the contributions with an average of ₹1,625.19 crores, reflecting the sector's high revenue base and substantial profitability, which translates into higher CSR allocations. **Information Technology (IT)** follows with ₹1,401.74 crores, showcasing the sector's consistent growth and global presence, enabling significant CSR funding. **Financial Services** is the third-highest contributor, averaging ₹1,119.63 crores, attributable to its large-scale operations and regulatory compliance with CSR norms. These three sectors together highlight the dominance of capital-intensive and high-profit industries in driving CSR spending.

Table 2: Sector Wise CSR Contribution of NIFTY 50 Companies (2017-2022)

Sector Wise Classification	Average CSR Contribution
Financial Services	1119.63
Information Technology	1401.74
Oil, Gas and Consumable Fuels	1625.19
Fast Moving Consumer Goods	536.38
Automobile and Auto Components	490.51
Healthcare	148.62
Metals and Mining	348.34
Telecommunication	22.45
Consumer Durables	87.76
Power	561.69
Construction	272.79
Services	60.38

Source: National CSR Portal (<https://www.csr.gov.in>)

Conversely, sectors like Telecommunication (₹22.45 crores) and Consumer Durables (₹87.76 crores) show minimal CSR contributions, possibly due to narrower profit margins or limited focus on CSR activities. The Healthcare sector, despite its critical societal relevance, averages only ₹148.62 crores, indicating potential underinvestment in this socially impactful area. Sectors like Fast Moving Consumer Goods (₹536.38 crores) and Power (₹561.69 crores) maintain moderate contributions, reflecting balanced profitability and CSR engagement. This distribution highlights the need for companies in lower-contributing sectors to align their CSR strategies with national priorities, ensuring broader societal impact while leveraging their unique

strengths. The data also underscores an opportunity for cross-sector collaboration to address developmental challenges effectively.

c. CSR Compliance of Indian Corporates

The analysis of Corporate Social Responsibility (CSR) compliance trends in Indian companies, as summarized in Tables 3 and 4, reveals notable shifts in corporate behaviour over five financial years (2017–2022). A consistent rise in the number of companies spending more than the prescribed CSR amount is evident, increasing by 116% from 2017–18 to 2021–22.

Table 3: CSR Compliance of Companies

Financial Year	Number of Companies			
	Exactly as Prescribed	More than Prescribed	Less than Prescribed	Zero Spent
2017- 18	1066	4945	3767	11748
2018- 19	744	6334	4130	13976
2019- 20	810	7004	4736	10435
2020- 21	1511	9935	3506	5888
2021- 22	1251	10657	3151	3984

Source: National CSR Portal (<https://www.csr.gov.in>)

This trend underscores growing awareness and proactive engagement among businesses toward social and environmental issues. Conversely, the number of companies spending less than the prescribed amount or not spending at all (zero spenders) shows a marked decline in recent years, particularly between 2020–21 and 2021–22, where zero spenders reduced by 66%. This decline can be attributed to stricter regulations and enhanced monitoring mechanisms, such as those enforced under the Companies Act, 2013, and the active role of the National CSR Portal.

Table 4: Percentage Analysis of CSR Compliance of Companies

Financial Year	Percentage of Increase or Decrease in the Number of Companies			
	Exactly as Prescribed	More than Prescribed	Less than Prescribed	Zero Spent
2017- 18	0%	0%	0%	0%
2018- 19	-30%	28%	10%	19%
2019- 20	-24%	42%	26%	-11%
2020- 21	42%	101%	-7%	-50%
2021- 22	17%	116%	-16%	-66%

Source: National CSR Portal (<https://www.csr.gov.in>)

Despite these positive shifts, a significant proportion of companies continue to spend "exactly as prescribed," suggesting a compliance-driven rather than a voluntary or strategic approach toward CSR. The dip in compliance from 2017–18 to 2019–20 among companies adhering to the exact spending threshold (-30% in 2018–19 and -24% in 2019–20) indicates potential challenges in operationalizing CSR activities during these years. However, the subsequent increase by 42% in 2020–21 suggests a recovery, possibly influenced by the heightened emphasis on CSR during the COVID-19 pandemic, where companies were encouraged to allocate resources for health, infrastructure, and community support. The patterns depicted highlight a dual trajectory: while some companies exhibit leadership in CSR spending, others remain confined to statutory obligations, signalling the need for enhanced frameworks that encourage innovation and strategic alignment of CSR initiatives with business objectives.

d. CSR and SDG Alignment: Analysing Sectoral Priorities and Funding Trends in India

The alignment of Corporate Social Responsibility (CSR) initiatives with Sustainable Development Goals (SDGs) is critical for fostering sustainable development in India. Analysis of sectoral CSR funding trends reveals a strong focus on areas like education, livelihood, and health, which align with SDGs 4 (Quality Education), 8 (Decent Work and Economic Growth), and 3 (Good Health and Well-being). Education and livelihood received the highest funding (₹6,779.42 crores annually on average), reflecting the prioritization of empowering communities and reducing inequalities. Similarly, health, hunger eradication, and sanitation ranked second (₹5,895.32 crores), demonstrating a commitment to poverty alleviation and enhancing public health infrastructure. These investments indicate that companies prioritize immediate-impact and high-visibility initiatives addressing critical societal needs.

Table 5: Sector Wise CSR Funding- Ranking			
Development Sector	SDG Addressed	Average	Rank
Education, Differently Abled, livelihood	SDG 4: Quality Education, SDG 8: Decent Work and Economic Growth, SDG 10 Reduced InequalitiesSDG 4: Quality Education	6,779.42	1
Health, Eradicating Hunger, Poverty and Malnutrition, Safe Drinking water, Sanitation	SDG 1: No Poverty SDG 2: Zero Hunger SDG 3: Good Health and Well-being SDG 6: Clean Water and Sanitation	5,895.32	2
Environment, Animal Welfare, Conservation of Resources	SDG 13: Climate Action SDG 14: Life Below Water SDG 15: Life on Land	1,580.64	3
Rural Development	SDG 1: No Poverty SDG 9: Industry, Innovation, and Infrastructure SDG 11: Sustainable Cities and Communities	1,336.37	4
Prime Ministers National Relief Fund	SDG 1: No Poverty SDG 11: Sustainable Cities and Communities (Disaster Response and Relief)	957.16	5
Any Other Fund	SDG 17: Partnerships for the Goals (Varies based on Fund Objectives)	750.69	6
Gender Equality, Women Empowerment, Old Age Homes, Reducing Inequalities	SDG 3: Good Health and Well-being SDG 5: Gender Equality SDG 10: Reduced Inequalities	524.70	7
Heritage Art And Culture	SDG 11: Sustainable Cities and Communities (Cultural Preservation)	224.85	8
Encouraging Sports	SDG 3: Good Health and Well-being SDG 4: Quality Education	216.01	9
Swachh Bharat Kosh	SDG 6: Clean Water and Sanitation SDG 3: Good Health and Well-being	79.73	10
Slum Area Development	SDG 1: No Poverty SDG 11: Sustainable Cities and Communities	63.49	11
Other Sectors (Technology Incubator And benefits To Armed Forces And Admin Overheads)	SDG 9: Industry, Innovation, and Infrastructure SDG 16: Peace, Justice, and Strong Institutions	56.75	12
Clean Ganga Fund	SDG 6: Clean Water and Sanitation SDG 14: Life Below Water	24.86	13
Others	Varies based on specific project goals; often contributes to SDG 17: Partnerships for the Goals	10.22	14

Source: National CSR Portal (<https://www.csr.gov.in>)

However, the data highlights significant underfunding in sectors such as environmental conservation, gender equality, and cultural preservation, which contribute to long-term, transformative SDGs like 13 (Climate Action), 5 (Gender Equality), and 11 (Sustainable Cities and Communities). Environmental initiatives received only ₹1,580.64 crores, while gender equality projects garnered a mere ₹524.70 crores, indicating gaps in corporate focus on these essential areas. Low-ranked sectors like slum development, sports promotion, and the Clean Ganga Fund further underscore the uneven distribution of CSR funds, with funding levels insufficient to create substantial impacts. These disparities suggest the need for diversified CSR strategies that address both immediate and long-term development goals.

To achieve holistic alignment with the SDGs, corporations must balance their investments across high-impact and underfunded areas. Strategic diversification, supported by partnerships with government and non-governmental organizations, can help address funding gaps in neglected sectors. Encouraging innovation and adopting data-driven approaches can further enhance the effectiveness of CSR initiatives. By integrating a broader spectrum of SDGs into their CSR frameworks, Indian companies can ensure equitable and sustainable development, contributing more effectively to national and global development agendas.

5. Recommendations and Policy Implications

- i. **Regional Balancing:** Policies should incentivize companies to allocate CSR funds to underdeveloped states and Union Territories. The government could introduce tax benefits or recognition programs to encourage contributions to regions with lower corporate presence.
- ii. **Strengthening SDG Alignment:** Corporations must broaden their CSR initiatives to encompass underfunded SDGs, such as Climate Action (SDG 13) and Gender Equality (SDG 5). Establishing a central body to monitor SDG-linked CSR activities could ensure accountability and equitable funding distribution.
- iii. **Sector-Specific Guidelines:** Regulators should encourage lower-contributing sectors like telecommunications and consumer durables to enhance their CSR investments by linking sectoral profits with mandatory CSR outlays.
- iv. **Partnerships and Collaboration:** Corporate-Government-NGO partnerships can drive innovative solutions to address regional and sectoral disparities. Collaborative programs could focus on capacity building, infrastructure development, and sustainable practices.
- v. **Transparent Reporting Mechanisms:** Enhanced reporting standards for CSR activities, including region-specific data and SDG mapping, would improve transparency and enable better policymaking. These recommendations aim to make CSR initiatives more inclusive and impactful, ensuring equitable development across all regions and sectors.

6. Conclusion

This study reveals critical disparities in CSR contributions across regions, sectors, and SDG priorities in India. While economically advanced states and profitable sectors dominate CSR funding, underserved areas and long-term development goals remain neglected. The findings emphasize the need for targeted strategies to bridge these gaps, leveraging regulatory frameworks, incentives, and collaborative approaches. Aligning CSR efforts with underfunded SDGs and promoting balanced regional development will ensure that corporate contributions more effectively address India's socio-economic challenges. By adopting a holistic and data-driven approach, Indian corporations can enhance the impact of CSR initiatives, contributing to sustainable and inclusive national growth.

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Effects of the GST on the Indian FMCG Sector under Wavelet Coherence Analysis – An Empirical Study

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Abstract

This study investigates the effects of the GST on the FMCG sector in India during the period January 2015 to August 2024. Monthly observations of the BSE FMCG index are considered. Moreover, a dummy variable of GST is constructed. Descriptive statistics, along with the ADF unit root test, quantile regression model, and Wavelet Coherence analysis, are used to discuss the purposes of the study. It is detected that the data is non-normal in its kind and does not suffer from the problem of a unit root. The quantile regression model confirms a positive relationship between the variables, with a stronger relationship at the higher quantiles. The heat map of the wavelet coherence analysis confirms a significant effect, denoted by red and yellow colour contrast, with a positive co-movement initially, which later changes to a negative co-movement. Again, Markov regime-switching confirms the regime-switching behaviour of the BSE FMCG index.

Keywords: FMCG, GST, Quantile Regression, Wavelet Coherence, Markov regime-switching model

1. Introduction

The FMCG industry makes a substantial direct and indirect tax contribution of USD 6.5 billion. In India, the food and beverage business constitutes over 50% of the FMCG segment. An additional 30% is from domestic and personal care, therefore covering the entirety of the nation's rural and urban areas. The GST has gained a lot of grip and is frequently discussed since it is thought to be a revolutionary reform for the Indian economy. Since it creates a single Indian market and reduces the tax's cascading effect on goods and service prices, it is quite popular for its kind (Lalropuii and Thanga, 2023). The GST will have an effect on the tax code, incidence of tax, its computation and disbursement, compliance, credit utilisation, and reporting (EY, 2016). The government of India is expected to have a broad tax base because almost all commodities and services will be subject to taxation, with the exception of the minimum income. It would be an inclusive indirect tax that would interchange federal and state government levies on the production, sale, and intake of products and services throughout the country. According to the input tax credit approach, it would be imposed and collected at every phase of the sale or purchase of products or services. GST has had a major influence on the FMCG industry, which comprises things like food and drink, personal care, and household items (Garg et al., 2023). Because it is more difficult for smaller, unorganised sector companies to comply with the new tax regime, the shift from unorganised to organised retail has been expedited by the GST. Due to the national tax rate being the same, FMCG companies may now reach a wider audience without having to worry about state-specific levies.

2. Synthesis of Literature

The following literature has been minutely examined and provides interesting findings that are summarised below: Maheshwari et al. (2024) used the event-study technique; this study aims to experimentally examine in what way the execution of the GST has impacted seventeen sectors of the Indian economy. We also evaluate the Indian stock market's semi-strong efficiency during the event. Results indicate that the incident has had a diverse impact on many sectors, with the FMCG industry benefiting and the pharmaceutical and power industries suffering. Additionally, we deduce that the market lacks complete semi-strong form efficiency. The study is distinctive in that it examines the effects of the GST implementation in India by sector. Both policymakers and investors can use this study to see how policies affect the stock market and to develop investing strategies.

Lalropuii and Thanga (2023) using information from the official websites of the National Stock Exchange (NSE) and the Office of the Economic Adviser, Ministry of Commerce & Industry, Government of India, examine how the GST has affected the FMCG segment's performance. The parameters being studied are share prices, revenues, PE ratios, EPS, dividends, yields, and WPI of particular commodity groupings during two 30-month periods prior to and following the implementation of GST. It was found to have a detrimental effect on the FMCG industry's performance, but this effect was more short-term than long-term due to market fluctuations. The GST had a beneficial effect on the overall performance of the FMCG segment in India, according to a comparison of the performance indicators during the five years under consideration, two and a half years before and after the GST. Additionally, following the implementation of GST, the FMCG segment's share price and financial ratio volatility rose, and the regular fluctuations in GST rates have been identified as major causes of India's market volatility.

Shinde, M. (2019) provides a source of income and improves efficiency and justice; tax policies are crucial to the health of the economy. A sound tax structure should endeavour to harvest tax returns to fund government expenditures on public services and infrastructure progress while also keeping up with issues of revenue dissemination.

Sreekumar and Chithra (2018) are of the opinion that a simplified tax system will emerge from the unification of numerous indirect taxes under the GST, particularly for sectors like FMCG. In addition to streamlining tax compliance, the tax rate will have a big effect on the FMCG industry. Given that taxes are an inevitable aspect of shopping, customers would be impacted by GST. However, they have little interest in foregoing significant GST on FMCG purchases. Furthermore, the price of consumer items is influenced by a number of additional factors in addition to the actual tax rate. Retailers are genuinely anticipating some long-term adjustments, as it is currently just beginning to be implemented.

Havalappagol and Anvekar (2017) are of the opinion that individuals are aware of the taxes they must pay when buying commodities, but they are not particularly interested in making this tax a priority when buying FMCG. Nonetheless, they acknowledge that accurate billing contributes to determining tax compliance responsibilities. The switch from sales tax to value-added tax (VAT) has not influenced consumers' decisions to buy, and since GST is a progressive tax system, this is to be expected. It was discovered that individuals place little value on purchases made using invoices. Better revenue collection would result from the implementation of consumer-focused GST regime awareness campaigns that encourage invoice-based purchase behaviours.

Most of the studies are theoretical in nature and have failed to capture the dynamism between the Indian FMCG sector and GST. Moreover, in recent times, studies have hardly found empirical outcomes that look for the impact of the GST on the FMCG sector in India.

The authors made the decision to investigate the interaction between the Indian FMCG industry and the GST, as well as the impact of the GST on the Indian FMCG industry, based on the aforementioned research gaps.

3. Research Methodology

The study period is from January 2015 to August 2024, with 116 monthly observations, where January 2015 to June 2017 represents the stretch before the execution of GST, denoted by '0' and July 2017 to August 2024 is considered as the time period after the execution of GST

(https://cag.gov.in/uploads/download_audit_report/2019/Chapter_1_Implementation_of_GST_of_Report_No_1_1_of_2019_Compliance_Audit_of_Union_Government_Department_of_Revenue_Indirect_Taxes_Goods_and_Services_Tax.pdf), denoted by '1'. Here, GST is a dummy variable constructed. Moreover, the BSE FMCG index is considered a proxy for the FMCG segment in the context of India. To address the objectives, descriptive statistics along with the ADF unit root test, quantile regression model, Wavelet Coherence analysis, and Markov regime-switching (MRS) model are used.

4. Outcomes and Debates

4.1 Outcomes

4.1.1 Descriptive Figures

Table 1: Descriptive Figures of BSE FMCG and GST

	BSE FMCG	GST
Mean	12409.55	0.7413
Median	11510.42	1
Maximum	23022.21	1
Minimum	7114.45	0
Std. Dev.	3799.537	0.4397
Skewness	0.8058	-1.1024
Kurtosis	2.8858	2.2155
Jarque-Bera	12.619	26.4743
Probability	0.0018*	0.0002*
Observations	116	116

(* indicates significance at 1% level)

(Source: Author's own compilation from computation using E-views 8.0)

The standard deviation values of the variables, namely BSE FMCG and GST, indicate more variability in the index values of the BSE FMCG and moderate variability for GST. Skewness confirms right-skewness for BSE FMCG and left-skewness for GST. Kurtosis confirms non-normality, which is further verified by the significant p-value of the Jarque-Bera test.

4.1.2 Augmented Dickey-Fuller (ADF) Unit Root Test

Table 2: ADF Test of BSE FMCG and GST

Trend and Intercept				
	At Level		At First Difference	
	t-Statistic	Prob.*	t-Statistic	Prob.*
BSE FMCG	-0.8122	0.9608	-9.0495	0.00*
GST	-1.6138	0.7817	-10.701	0.00*

(* indicates significance at 1%)

(Source: Author's own compilation from computation using E-views 8.0)

ADF unit root test suggests that there is an occurrence of a unit root at the level for both the variables, but the dataset is open to a unit root at the first difference. Hence, we may conclude that the dataset is stationary in nature.

4.1.3 Quantile Regression Model

Table 3: Quantile Regression Model between BSE FMCG and GST

Quantiles	Variable	Coefficient	Std. Error	t-Statistic	Prob.
0.25	GST	11305.73	374.7575	30.1681	0.00*
0.50		12508.59	477.9046	26.1738	0.00*
0.75		16131.19	743.451	21.6977	0.00*

(* specifies significance at 1%)

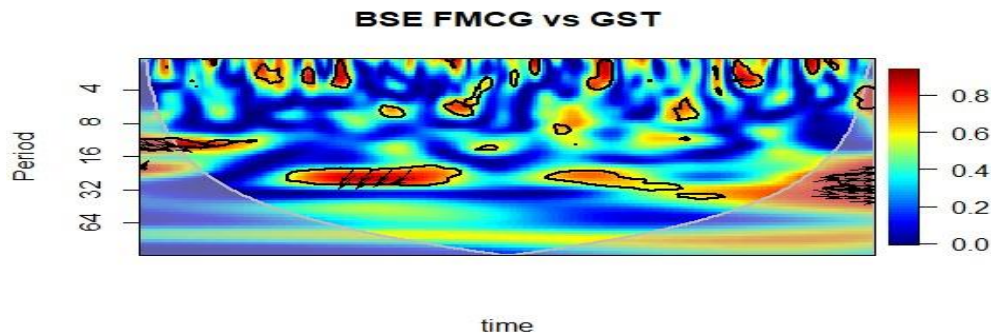
(Source: Author's own compilation from computation using E-views 8.0)

Table 3 explains the findings of the quantile regression model for three different quantiles at the 25th percentile, the median, and the 75th percentile, which depict the points in the conditional distribution of the BSE FMCG index. The coefficients are found to be positive, indicating a positive relationship between the BSE FMCG index and the GST. However, it is significant to note that as we move towards higher quantiles, the relationship is much stronger. This indicates that GST has a more prominent effect when the FMCG index is performing well at the higher quantiles.

The BSE FMCG index reacts less strongly to changes in GST at the 25th quantile, which may indicate that businesses or the industry as a whole are struggling and that the effects of the changes are being felt less intensely. Gradually, as the relationship is measured at the 75th quantile, the largest reaction to GST amendments is seen in the BSE FMCG index. This suggests that GST modifications have a greater effect on the FMCG sector's performance when it is doing well, i.e., at a higher index level.

4.1.4 Wavelet Coherence (WTC) Analysis

Figure 1: WTC Examination between BSE FMCG and GST



(Source: Generated using R-studios)

This study uses a bi-variate wavelet coherence framework to assess the relationship between the two-time series data sets in the frequency and time domains. The related coefficients at each scale and time point are compared to determine the wavelet coherence. It assesses the two signals of the time-frequency relationship's strength and consistency. The relationship and effects are measured across a heat map in the above figure, where the vertical axis represents frequencies, and the horizontal axis represents time. As the frequency decreases, the scale increases. The areas in time-frequency space where the two-time series differ are shown by the wavelet coherence. The coherence, which ranges from red (high coherence) to blue (poor coherence), shows the level of co-movement. The area inside the inverted cone (contour) denotes the fragment where the effect and relationship are noted. Warmer colours that start with yellow denote the beginning of the impact of the GST on the FMCG sector. As the colour becomes hotter, represented through red, it signifies noteworthy effects. The light green colour marks the beginning of time, which faces a decline in the effect. As the colour turns to light blue, followed by deeper blue, the effect gradually fades off. Cold zones indicate time and frequencies independent of GST outside of the key areas. This is estimated using phase-randomised surrogate series in a Monte Carlo simulation. The contour may also be referred to as the cone of influence. Moreover, the warmer patches bounded in black are significantly captured at the later part of the heat map, which is comparatively larger than the initial time.

Also, it needs to be mentioned that the heat map includes some patches bounded in black, including some arrows within black. Initially, these arrows were South-East Arrows ($\searrow$). They indicate an in-phase time series model that is pro-cyclical and confirms a positive correlation between BSE FMCG and GST. Gradually, it changes to South-West Arrows ($\swarrow$), confirming a change in the nature of the correlation to negative. Outside the contour, there are some right-sided black one-way arrows ($\rightarrow$). However, they do not possess any meaningful correlation.

4.1.5 Markov Regime-switching (MRS) Model

Table 4: MRS Model between BSE FMCG and GST

Dependent Variable	Independent Variable	Regimes	Coefficient	Prob.	p ₁₁	p ₂₁
BSE FMCG	GST	1	11318.19	0.00*	0.97	0.03
		2	16630.7	0.00*		

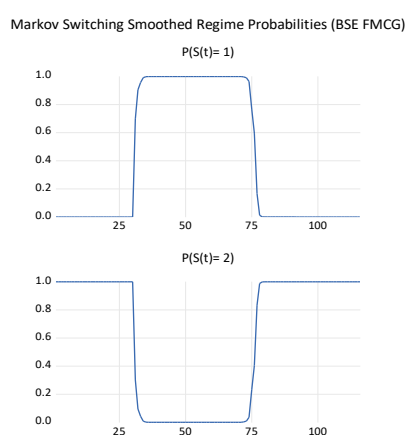
(* specifies significance at 1%)

(Source: Author's own compilation from computation using E-views 8.0)

Table 4 summarises the behaviour of the BSE FMCG during the study period, which has been segmented into two regimes by the MRS model. It is observed that regime 1 is comparatively less volatile than regime 2, which is also significant in nature, as demonstrated through the coefficient value. Again, p_{11} and p_{21} demonstrate the probability of BSE FMCG staying in regime 1 when it is already in state 1 and BSE FMCG coming back to state 1 when it has already moved to state 2. It is observed that p_{11} is 0.97, indicating the propensity of BSE FMCG to stay in state 1, as it is a comparatively less volatile regime. Also, the chances of BSE FMCG coming back to state 1 from state 2 are only 0.03. This is so because regime 2 is comparatively more volatile, and the chances of exiting from it are quite difficult.

Deeper structural, economic, and market-driven factors that have impacted the Indian consumer goods industry since 2017 are reflected in the regime-switching behaviour seen in the link between GST and the BSE FMCG index. These trends result from the FMCG industry posturing a defensive trait, as well as the GST evidencing a structural reform. Again, regime 2, which exhibits a much larger coefficient for the impact of GST, perhaps denotes times of strong economic activity, favourable policy clarity, or improved investor mood. The advantages of GST, such as simplified logistics, lower tax rates on a number of FMCG products, and less uncertainty about compliance, are more effectively incorporated into stock valuations during these stages. When there is a clear policy direction, consistent compliance procedures, and strong consumer demand, investor confidence in the FMCG industry increases. Stronger positive market reactions result from this, which explains the greater coefficient under Regime 2. However, some volatility exists initially due to higher trading volume as a result of market reforms and due to price swings that are caused by brief discrepancies between investor expectations and actual corporate performance (Mulky, A. G., 2013).

Figure 2: MRS between BSE FMCG and GST



(Source: Generated using E-views 8.0)

4.2 Debates

With the implementation of the GST on July 1, 2017, India's indirect tax system saw a significant structural change. A complicated web of federal and state-level levies, such as excise duty, service tax, VAT, CST, entry tax, luxury tax, and various cesses, made up the taxing structure prior to GST. Tax collection, compliance, and interstate commerce were all hampered by this disjointed system. The pre-2017 system had significant rigidities and inefficiencies when it came to payment and collection.

Tax collection was divided among several authorities with overlapping jurisdictions prior to the implementation of GST. The states collected VAT, entry tax, and local body taxes, while the centre collected excise and service taxes. Due to the lack of a single input tax credit (ITC) framework for all goods and services, this multi-point taxation produced cascading effects, where tax was imposed on tax. As a result, companies frequently had to deal with increasing tax obligations and higher operating expenses. Since businesses had to submit multiple returns, keep separate records for each tax, and communicate with many departments, compliance was also difficult. Due to systemic flaws, inconsistent rates, and poor cooperation between federal and state authorities, tax evasion was comparatively simpler (<https://cbic-gst.gov.in/pdf/01012018-GST-Concept-and-Status.pdf>). On the contrary, since its implementation in 2017, the GST has simplified India's tax structure, resulting in a single national tax system with uniform rates, centralised administration, and a smooth input tax credit system. GST has greatly increased compliance and transparency in terms of tax collection. Better transaction tracking and fewer options for tax evasion have been made possible by the transition to digital infrastructure, such as e-way bills, e-invoicing, and GSTN-based return filing. From an average of over ₹90,000 crores in 2017–18 to above ₹1.6 lakh crore by 2023–24, monthly GST collections have steadily climbed, demonstrating both increasing economic growth and better compliance (<https://economictimes.indiatimes.com/news/economy/finance/gross-gst-collections-double-in-five-years-to-hit-record-22-08-lakh-crore-in-fy25/articleshow/122158450.cms>). Compared to the pre-GST era, where state VAT and central excise collections frequently varied greatly and lacked real-time analytics, this is a significant structural improvement.

GST has made it easier for businesses to comply with payments by consolidating several taxes into a single system. The cascading impact has been reduced by the input tax credit chain under GST, which lowers the total tax burden on manufacturers and lowers the end cost of numerous goods and services. Because there are no longer any delays at border checkpoints, the uniformity of pricing between states has improved interstate trade and decreased logistics expenses. The composition scheme, threshold exemptions, and streamlined return structures were advantageous to small firms, although at first, technology adaptability made compliance seem difficult.

5. Concluding Annotations

Important information on the varied impacts of GST on the BSE FMCG index can be found in the quantile regression study. When the FMCG sector is doing well, the impact of GST is more pronounced, as seen by the increasing coefficients across quantiles. This emphasises the significance of taking various market situations into account when evaluating the consequences of fiscal strategy deviations such as GST. Under wavelet coherence analysis, a significant positive co-movement is noted initially between BSE FMCG and GST, which gradually changes to a negative relationship. FMCG companies had to deal with a variety of taxes, including service tax, VAT, and excise duty, preceding the implementation of GST. The same product was taxed more than once at various points during its production and distribution, creating a cascading impact. These various levies were combined into one with the implementation of the GST. As a result, the cascading tax effect was removed, which decreased FMCG companies' total tax burden. The BSE FMCG index benefited from cost savings and possibly increased profit margins brought about by the reduced tax burden. Moreover, an increase in consumer demand results in higher sales and profits for FMCG companies, which in turn drives up the value of their stocks on the BSE.

On the contrary, the implementation of GST caused considerable disruptions to supply chains. There were brief operational snags as FMCG companies had to modify their distribution networks to comply with the new tax structure. The price of FMCG stocks could be adversely affected by these disruptions if they result in lower sales or higher expenses. Moreover, issues with inventory management and increases in the cost associated with compliance with GST have led to a significant negative correlation. Additionally, there were multiple changes made to the tax rates on different FMCG products after the introduction of the GST. Tax rates that fluctuate frequently have the potential to cause uncertainty, interfere with pricing tactics, and have a detrimental effect on stock performance.

Hence, the modelling is successful enough to capture the temporal shifts in the relationship between BSE FMCG and GST.

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The Past, Present and Future of Indian Jute Industry – A Critical Review

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Abstract

Jute industry in India has a rich historical background and strong trade-relations majorly with the Asian countries and several other countries of the world, as well, since time immemorial. Having its mention in numerous important literature, this ancient-old industry has been a significant part of India's economic progress from the British colonial era. It, even, achieved a 'major industry' status at that time and became acknowledged as 'the golden fiber industry' of India for its several industrial and household usage. Unfortunately, during the last few decades, intense competition from synthetic and other non-natural fibres has compelled this industry to seek market expansion through product diversification, shifting its focus from its core packaging products. However, the growing environmental awareness throughout the globe is slowly, yet effectively, creating opportunities for this industry in terms of regenerating demands for its eco-friendly packaging products and creating new demands for its diversified applications, as well, and thereby, leading it to an era of new possibilities, expectations, and resurgence. This paper, therefore, attempts to explore Indian jute industry's relevance in modern times by examining its historical journey and experiences, current innovations and experiments, and future expectations and prospects. The paper, further, tries to identify the critical facets, if any persisting and blocking the road of this industry's 'Golden Chariot', and thereby, suggesting the remedial measures to confiscate such hindrances to strengthen its long-term sustainability.

Key-words: Jute; Golden Fiber Industry; Jute Products; Jute Diversified Product

1. Introduction

Jute, an essential agricultural fiber crop, falling under the Jute and Allied Fibre (JAF) category, is primarily cultivated in the equatorial, tropical, and subtropical regions across the globe. Jute, having its two main varieties, namely, White jute and Tossa jute, is popularly known by various other local names such as Pat, Kosta, Nalita, and Bimli etc. in different regions of the major jute producing countries including India, Bangladesh, Thailand, China, and Brazil.

The word 'Jute' is derived from the Bengali word 'Pata'. Being a part of the country's textile industry, the jute sector plays a vital role in our national economy by causing substantial revenue generation and employment opportunities, since earlier times. Historically, India emerged as a key global producer of raw jute and supplier of jute products during the British colonial era and it still remains pivotal in the India's textile industry. However, the industry grapples with some challenges such as outdated technology, low productivity, fiscal issues, and competition from the synthetic alternatives. Despite these, jute's versatility has expanded its application beyond traditional packaging materials to include household items like mats, bags, and fabrics. India has long been the global leader in raw jute production and exports, with jute consistently holding the second position only to cotton among all other natural fibers. Known for its durability and eco-friendliness, jute has maintained its prominence for many years. Recent innovation in developing hydrocarbon-free packaging bags, spearheaded by the Indian Jute Industries Research Association (IJIRA), has notably been able to garner international market demand. Additionally, jute's entry into non-woven sectors, catering to the needs of automotive and aviation industries, highlights its adaptability and eco-friendly appeal in the other industrial sectors, other than packaging.

The rest of the paper is sketched in the following manner. *Section 2* reviews the existing literature in the present context to identify the research gap. *Section 3* presents the objectives and research methodology followed in the present study. *Section 4* provides a comprehensive review of the past and present status and future prospects of the Indian jute industry and identifies the critical issues, hindering the progress of the industry, and suggestions are rendered while drawing conclusions at *Section 5*.

2. Literature Review

This segment delves into the documented research on the Indian jute industry, carried out both nationally and internationally, and aiming at identifying the research gap to underscore the necessity of the present study.

In global literature, *McLeod (1916)* illuminated the early history and usage of jute in India. *Gupta (1953)* in his study, highlighted Germany as India's primary competitor in the jute industry in 1940, with India housing for almost 57% of the world's jute looms. *Mujeri (1978)* devised a model to understand the global jute sector during post-World War II, emphasizing India's role therein. *Sethia (1996)* highlighted Indian jute industry's contribution to the industrial growth of the Dundee in her research. *Dey (2005)* underscored India's significance in the global packaging industry prior to the arrival of synthetic products. *Sharma, Kaushik, and Chatterjee (2009)* showcased India's swift ascendancy over Dundee's jute industry within a decade of entering the global market. *Stewart (2012)* concluded that Indian competition led to the decline of Britain's jute industry. *Omar (2012)* analyzed Bengal's jute industry within the framework of global trade. *The IJSG (2012)* provided a comprehensive information on world jute agriculture, manufacturing, and trade, with an emphasis on India's position. *Islam and Alauddin (2012)* conducted a comparative analysis of leading jute-producing nations. *Ghosh and Jethi (2013)* examined the production growth and variability across major jute-producing nations. *Tomlinson (2015)* discussed Dundee's struggles against Indian competition during the British era. *Baviskar, Perke and More (2022)* explored stable trends in India's jute export and import prices over the past three decades. *Sailer (2022)* focused on workplace dynamics in Bengal's jute industry during the British colonial rule from 1870 to 1930. These studies collectively underscore the historical prominence and global significance of the Indian jute industry.

In India, numerous studies on the jute industry have been conducted, with the following considered relevant in the present context. *Bhattacharyya (1975)* delved into the capital structure of the Indian jute industry, noting that its borrowings surpassed equities and retained earnings during 1958-1959 to 1967-1968. *Chandra and Sarkar (1993)* examined the dividend policy of Indian jute companies during the same period, finding a lack of consistency in dividend policies. *Mujumdar and Basu (1994)* proposed strategies to enhance the financial stability of the Indian jute industry through better materials management. *Basak and Sengupta (1997)* attributed the stagnation of the Indian jute industry to its reliance on traditional jute products. *Sen (1999)* assessed the status of women and labour in the late colonial Indian jute industry. *The Indian Jute Industries Research Association (2003)* advocated for the establishment of more jute spinning mills in northeastern India. *Pandit and Chaudhuri (2007)* portrayed the revival of the Indian jute industry, with special reference to West Bengal through their study. *Pal and Chakraborty (2011)* analyzed the challenges faced by the Indian jute industry in the globalization era, and pinpointed some of its key-problems as declining capital productivity, inefficient technology, and a lack of innovation etc. *Khatun and Deca (2013)* studied the growth and instability of the jute industry in Assam, India. *Karmakar (2013)* assessed the economic impact of the Howrah Amta Barada jute industry in India. *Bagchi and Das (2014)* investigated the short-term efficiency and potential revival strategies for the Indian jute industry. *Bag (2017)* advocated for productivity enhancements in the Indian jute sector, while *Singh and Singh (2019)* argued for technological upgradations. *Chakraborty (2020)* examined the socio-economic and environmental impacts of the Indian jute industry. *Kalita and Bhuyan (2020)* explored the future prospects of women entrepreneurship in jute sector of Assam, India.

These significant studies together offer a comprehensive understanding on the Indian jute industry. While some shed light on its historical trends, others address its current financial or non-financial challenges, and a few explore the

industry's future prospects. However, there is a scarcity of critical reviews that integrate the past experiences, present experiments, and future expectations of the industry together, in the form of a single and comprehensive study. Yet, the studies conducted by *Singh (2005)* to analyze the pre and post-partition scenario and future prospects of the industry; *Kumar (2017)* to highlight the industry's global growth; a 2018 report from the *Office of the Textile Commissioner, Ministry of Textiles, GOI* to address the recent industry issues; *Kumari, Devegowda and Khuswaha (2018)* to focus on its trends from the late 20th to the early 21st century; and the *Jute Standing Committee Report, GOI (2024)* to explore the current development and promotional aspects of the Indian jute industry, are found noteworthy in this regard.

3. Research Gap

This study aims at filling the research gap, as identified above, by providing a critical review of the Indian jute industry, integrating its past, present, and future trajectories. It seeks to enhance the stakeholders' understanding and add value to the existing literature by addressing the vacuum, so explored.

4. Objectives of the Study

To address the present research gap, the following objectives of the present study are outlined:

A] Reconnoiter the evolution of Indian jute industry by:

- Looking into its historical importance and relevance in ancient India
- Examining its industrial recognition during the pre-independence era
- Realizing its importance and relevance in the post-independence era

B] Assess present status of Indian jute industry by:

- Highlighting its trends in
 - Raw jute production and state-wise distribution of jute mills
 - Progression in the number of jute mills
 - Industrial production of jute goods and international trade
- Reviewing its recent developments in:
 - Regulatory measures
 - Research and development
- Addressing its existing challenges

C] Analyze its future prospects by:

- Evaluating the demand for jute products diversified (JDPs)

D] Identify the critical and unanswered areas, deserving further attention.

5. Research Methodology

This study takes a critical approach, drawing from the existing literature and pertinent secondary sources to conduct a comprehensive review of the Indian jute industry. Covering a significant timeframe from pre-independence to the present day, it seeks to validate the industry's evolution across three key dimensions - historical experiences, current status, and future prospects. Utilizing graphical representations, tables, and charts, the exploration aims to draw qualitative insights relevant to the contemporary context. The study prioritizes capturing the theoretical underpinnings, relevance, and significance of the selected topic, refraining from employing any statistical methodology. Information and data have been meticulously curated from diverse published research materials, including articles, doctoral dissertations, and documented evidences, along with insights from pertinent governmental and non-governmental websites. This thorough compilation ensures a holistic understanding of the Indian jute industry's journey and development over the study period.

6. The Past-experiences, Present-experiments and Future-prospects of the Indian Jute Industry

This *Section* has been sub-divided into the following three parts, namely, Part (A), Part (B) and Part(C).

Part (A): Jute Industry in Ancient India, During British Colonialism and Post-independence Era:

Jute has a deep-rooted history in human civilization, with its origin tracing back to the ancient Africa and Asia. Archaeological findings also suggest its usage in the Indus Valley civilization during the 3rd millennium BC, making it one of the earliest fiber plants utilized by humans (*Wright, Lentz, Beaubien and Kimbrough, 2012*). Before its commercialization, jute was widely meant for various domestic purposes, including the making of grain sacks, ropes, floor mats, garments, and even paper. In India, jute cultivation has a long history, with its prominence growing during the Mughal era, when villagers often adorned jute attire. In ancient Africa and Asia, jute had a wide range of uses, from cordage and weaving fiber to culinary applications, while the Chinese employed it in the production of paper pulp (www.worldjute.com). Beyond its historical importance, jute holds significant religious and cultural value worldwide. Evidences suggest that in Hinduism, jute is regarded as sacred material, frequently used in religious ceremonies, rituals, and in crafting traditional sarees, garlands, and temple decorations. Similarly, in Buddhism, jute is esteemed for making ceremonial robes, prayer beads, and other religious items. In Africa, jute features in rituals and is used to create baskets, mats, and household goods. Thus, across cultures, jute has been incorporated into religious artifacts, decorative items, and traditional handicrafts since ancient times (www.jutegardens.com).

In pre-partitioned India, much of the country's jute production was concentrated in the eastern region. European involvement in the late 17th century spurred the commercialization of jute cultivation in India. By 1790, Indian raw jute reached Dundee, Scotland, establishing the city as the key-center for world jute trade. Recognizing this potential, the British East India Company initiated its first jute-trade from India in 1791, integrating jute into various industries, including military supplies. British manufacturers gained significant wealth from Indian jute products. In the mid-19th century, commercial jute production began in India when George Acland imported the basic jute spinning equipment from Dundee to set-up the first jute mill in Rishra in 1855. Power-driven weaving was introduced by 1859. By 1866, Bengal had three more jute mills, which generated considerable profits between 1868 and 1873. Further expansion occurred in 1874 with the establishment of five additional jute mills, followed by eight more in 1875 (www.bjmc.gov.bd). As a result, Bengal witnessed a significant boom in the jute industry during the late 19th century (*Mozid, 2020*). By 1880, the Indian jute industry had surpassed Dundee's textile sector, and from 1895 to the early 20th century, Dundee jute industrialists and the British East India Company operationalized several jute mills across Bengal. This led to the gradual decline of the Scottish jute industry, which eventually died-out by the late 20th century. By then, India began exporting jute products to the countries such as France, America, Italy, Austria, Russia, Belgium, and Germany. As a traditional agro-based manufacturing sector, the Indian jute industry gained significant global prominence, particularly during the British era. Historically, it was a major industry recognized for its packaging products, dominating the British colonial market. Hessian and sacking were the primary jute goods produced, with Bengal emerging as the hub for top-quality jute fiber and packaging material production.

In the post-independence period, British mill owners largely withdrew from India, transferring ownership to the Indian manufacturers. The partition resulted in many mills being located in East Pakistan, later becoming part of Bangladesh under the Bangladesh Jute Mills Corporation. This division, along with the withdrawal of British support, caused supply-side and demand-side challenges that affected the industry's commercial success. Despite numerous protective measures implemented by the India-government after independence, the jute industry has yet to fully regain its former prominence.

The next part represents the current state of the Indian jute sector, including its production capacity for raw jute and jute products, the operational count of jute mills in India, and the Indian jute industry's role in global jute trade. Additionally, it seeks to analyze the developmental efforts undertaken by the Government of India in the Indian jute sector during post-independence era.

Part (B): Present Status of Jute Industry in India

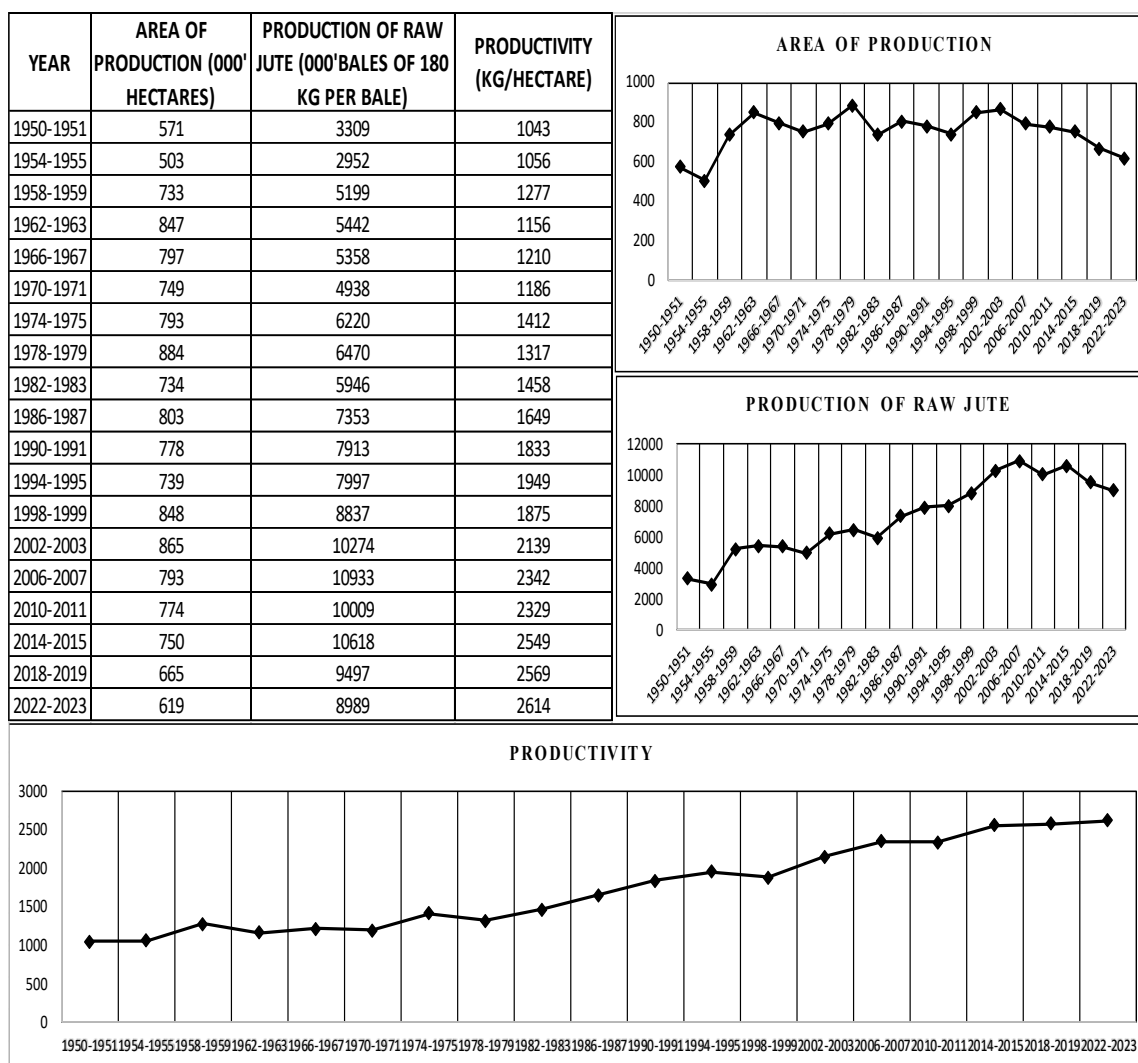
This Part is further subdivided into three sub-sections where section (i) illustrates the production of raw jute and the distribution of jute mills across different states in India. Section (ii) emphasizes the Indian jute sector's contribution in terms of jute goods production and export-trade. Section (iii) elaborates on recent developments within the Indian jute sector.

Section (i): Raw Jute Production and State-Wise Distribution of Jute Mills

India has historically been a dominant player in the global jute industry, excelling in both raw jute production and jute goods manufacturing. However, in recent years, the country's performance has become somewhat inconsistent, leading to its trailing behind Bangladesh, another major competitor in the international jute market. In India, jute cultivation is mainly appreciated in the states of West Bengal, Bihar, Assam, Odisha, Andhra Pradesh, Tripura, and Meghalaya. Among these, the Indian jute industry is especially reliant on West Bengal for its domestic supply of raw jute. Following the partition of India in 1947, the country lost its significant jute-producing regions and mills, which caused a substantial decline in its overall production of raw jute and jute goods. In response, India undertook a number of immediate measures to expand its jute cultivation areas to meet the growing demands of its existing mills. Despite the challenges, the jute industry continues to play a vibrant role in India's economy. Currently, around 43,250 permanent workers and 107,373 other workers are employed across 111 composite jute mills nationwide. Over the past four years, an average of 677 thousand hectares of land has been dedicated to jute cultivation, producing approximately 1.63 million metric tons of raw jute annually (www.jutecomm.gov.in).

Among the jute-producing states in India, West Bengal stands as the largest contributor, accounting for approximately 70% to 75% of the country's total raw jute production and utilizing nearly 70% of the cultivated land dedicated for jute. The state's favorable climate, fertile soil, and access to affordable labour create ideal conditions for the jute industry to thrive. Raw jute production is widely dispersed across West Bengal, with key districts such as Nadia, Murshidabad, 24 Parganas, Coochbehar, Jalpaiguri, Hooghly, West Dinajpur, Bardhaman, Maldah, and Medinipur playing a significant role in the state's output. Bihar stands as the second-highest producer of raw jute, with the Purnea district serving as the primary hub of production. Other contributing districts in Bihar include Katihar, Saharsa, and Darbhanga. Assam is the third-highest producer, with jute cultivation concentrated in the Brahmaputra valley. The main jute-producing areas in Assam are Goalpara, Kamrup, Nowgong, Darrang, and Sibsagar. Orissa and Uttar Pradesh also make notable contributions to raw jute production. In Orissa, Cuttack, Puri, and Bolangir are the key districts, while in Uttar Pradesh, Kheri, Bahraich, and Sitapur are the major jute-producing regions. Additionally, jute cultivation occurs in other parts of India, including Maharashtra, Kerala, Madhya Pradesh, Tripura, Meghalaya, and Andhra Pradesh (www.jutecomm.gov.in).

Exhibit 1: Area and Production of Raw Jute in India



Source: www.ijma.org, www.jute.com, www.jutecomm.gov.in

Interpretation

Over the past 72 years, raw jute production has fluctuated, with a notable decline since 2014-15. Despite minor increases, recent figures show no substantial growth. For example, jute cultivation dropped from 750,000 hectares yielding 10618x100 bales in 2014-15 to 619,000 hectares yielding 8989x100 bales in 2022-23. On the other hand, the area used for jute cultivation has steadily declined since 2006-07. While raw jute productivity has recently increased, this is primarily due to the reduced cultivated land area, and is not an actual improvement in production. Jute cultivation in a country like ours may fluctuate due to a number of factors like variable rainfall, market price changes, and competition from more profitable crops like paddy. India, once the leading producer, has been surpassed by Bangladesh and now faces consistent low production levels. To combat these issues, the government and research organizations are promoting high-yield jute seeds, modernizing retting and extraction techniques, improving access to credit and modern tools for farmers, and sharing knowledge on modern farming practices, but, the following questions appear inherently.

Critical Facets

- What additional measures are necessary to improve the current situation?
- Are the existing initiatives effectively addressing the challenges?
- Is there a waning interest among farmers in jute cultivation?

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- Can enhancing per-hectare productivity through high-yielding jute seeds alone resolve the crisis of declining annual production?

Now, regarding the distribution of jute mills across states in India, as of March 31st, 2024, there are 111 jute mills in operation, with 25 reported as closed according to the Jute Commissioner's Office, GOI. While the latest state-wise distribution is unavailable on its website, data from the Indian Jute Mill Association, as of July 2016, indicates the presence of 93 composite jute mills across various states, including West Bengal, Andhra Pradesh, Bihar, Uttar Pradesh, Assam, Odisha, Chattisgarh, and Tripura. Among these, West Bengal hosts the majority with 70 mills, followed by Andhra Pradesh with 9 mills, while Bihar, Uttar Pradesh, Odisha, Assam, Chattisgarh each have 3 mills, and Tripura has 1 mill. The distribution underscores the regional concentration of jute milling activities across the country.

Exhibit 2: State-wise Distribution of Jute Mills in India

Name of the State	Jute Mills						
West Bengal	Alliance	Hukumchand	Empire	Jagatdal	Kamarhatty	Kanknarrah	Kelvin
	Naihati	Prabartak	Reliance	Ango India	Agarpara	Auckland	Eastern
	Meghna	Naffar chandra	Titaghur	Nuddea	Alexendra	Kharda	Kinnison
	Baranagore	Shree Gourishankar	Waverly	Gouripore	Ambica	Bally	Bowreah
	Gloster	Howrah	Liudlow	Mahadeo	Premchand	Vijay Shree	Bharat
	Delta	Kanoria	National	Shree Hanuman	Trirupati	Aditya Translink	Angus
	Dalhousie	Ganes Mfg.	Victoria	Wellington	Ganges Pvt.	Northbrook	Hastings
	India	Gondalpara	G.S.Jute	Jutex	Uma Spinners	Birla	Budge Budge
	Cheviot	Caledonian	New Central	Calcutta	Hooghly	Union	Soorah
	Mangalpur	Sarada	Kamakshi	Essem	Kaliyagunj	Goyal Merchant	HSB Agro
Andhra Pradesh	East India	Nelimarla	Shree Bajrang	Aruna	Bobbili	East Coast	A.S. Jute
	Keshava	Chitavalshah					
Bihar	Katihar	R.B.H.M	Winsome				
Uttar Pradesh	Mahabir	Kanpur	J.K				
Assam	Assam	Atlanta					
Odisha	Kalingha	Konark	Jaikrishnadas				
Chattisgarh	Chattisgarh	Mohan					

Source: www.ijma.org

Interpretation

According to the Office of the Jute Commissioner, India's composite mills have averaged 1,136.6 thousand tons of jute goods annually over the past four years, using 45,521 looms and 7,69,800 spindles. These mills consume nearly 90 percent of India's raw jute, necessitating imports from Bangladesh due to a lag in high-quality jute fiber production. However, it is also true that India's low-quality jute fibre (in comparison to that of Bangladesh), suitable mainly for sacking bags. Besides, outdated extraction technologies and infrastructural gaps often hinder the raw material supply to mills, leading to poor mill performances and heightened import dependence. Nonetheless, the following important questions persist.

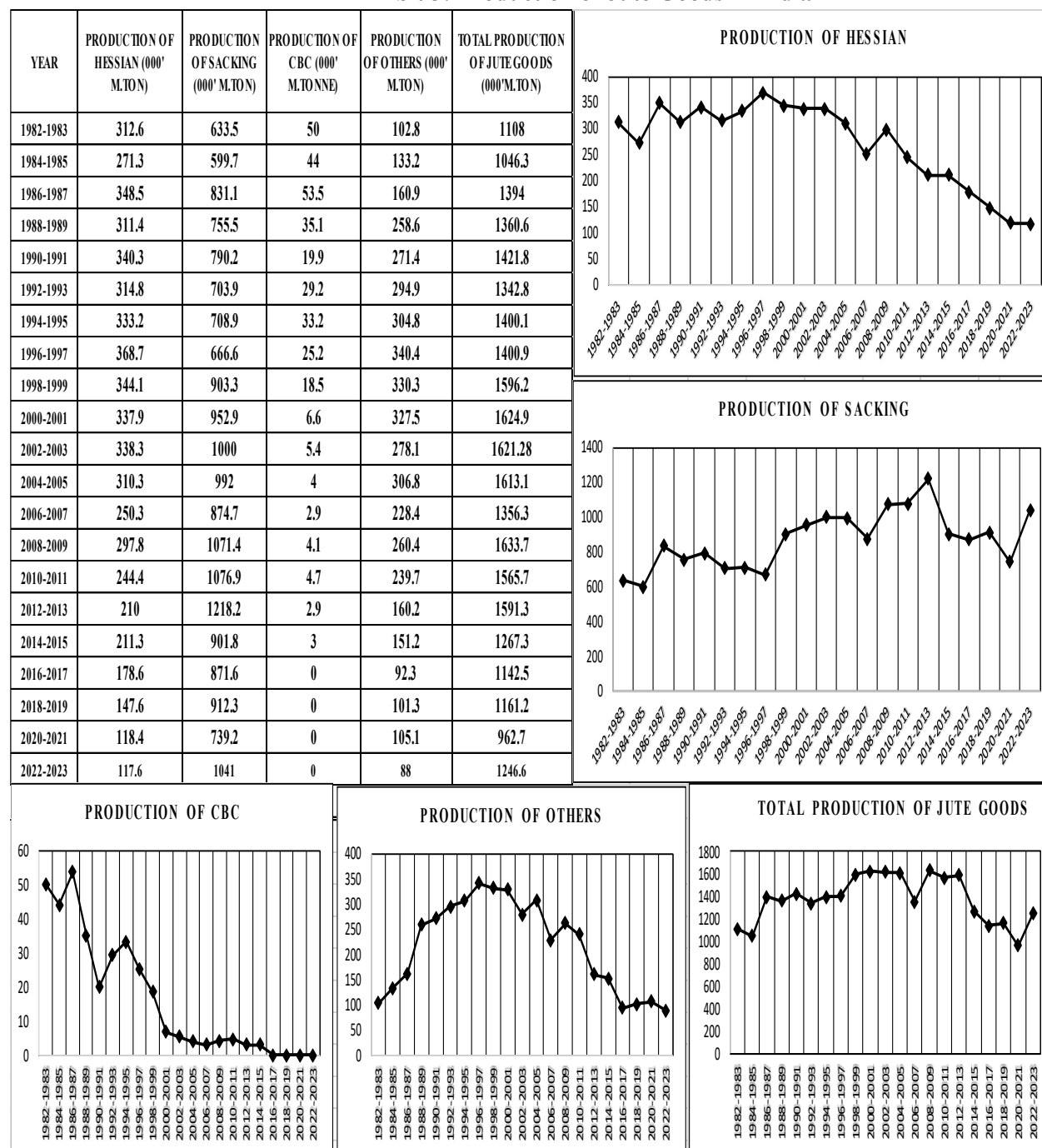
Critical Facets:

- What additional steps are necessary to enhance the production and supply of high-quality jute fiber to the India jute mills?
- Is it the extracting process or the dearth of high quality jute seeds, responsible for generating poor quality of jute fibre, in comparison to that of Bangladesh?
- Are the existing measures effectively addressing the quality issue of the jute fiber?
- What factors contribute to the closure of jute mills in India? Are those primarily internal or external in nature?
- What strategies have been implemented to revive the closed mills?

Section (ii): Production of jute goods and Export trade

India, once the largest producer (presently, the second largest) of raw jute globally, holds a significant position in jute goods production, too. Despite this, the Indian jute industry is yet to fully adapt to the evolving market demands and trends. With appropriate technical upgradations and modernization of existing jute mills, India could leverage its vast potential to meet changing market dynamics and excel in the international jute market. Despite all these, jute remains a crucial player in the Indian economy, specially in the textile sector. Besides its export potential, jute companies also accommodate the domestic demands, as well. The following *Exhibit* underscores India's performance in basic jute goods production over the study period.

Exhibit 3: Production of Jute Goods in India



[Source: Office of the Jute Commissioner, Government of India, Ministry of Textiles]

Interpretation

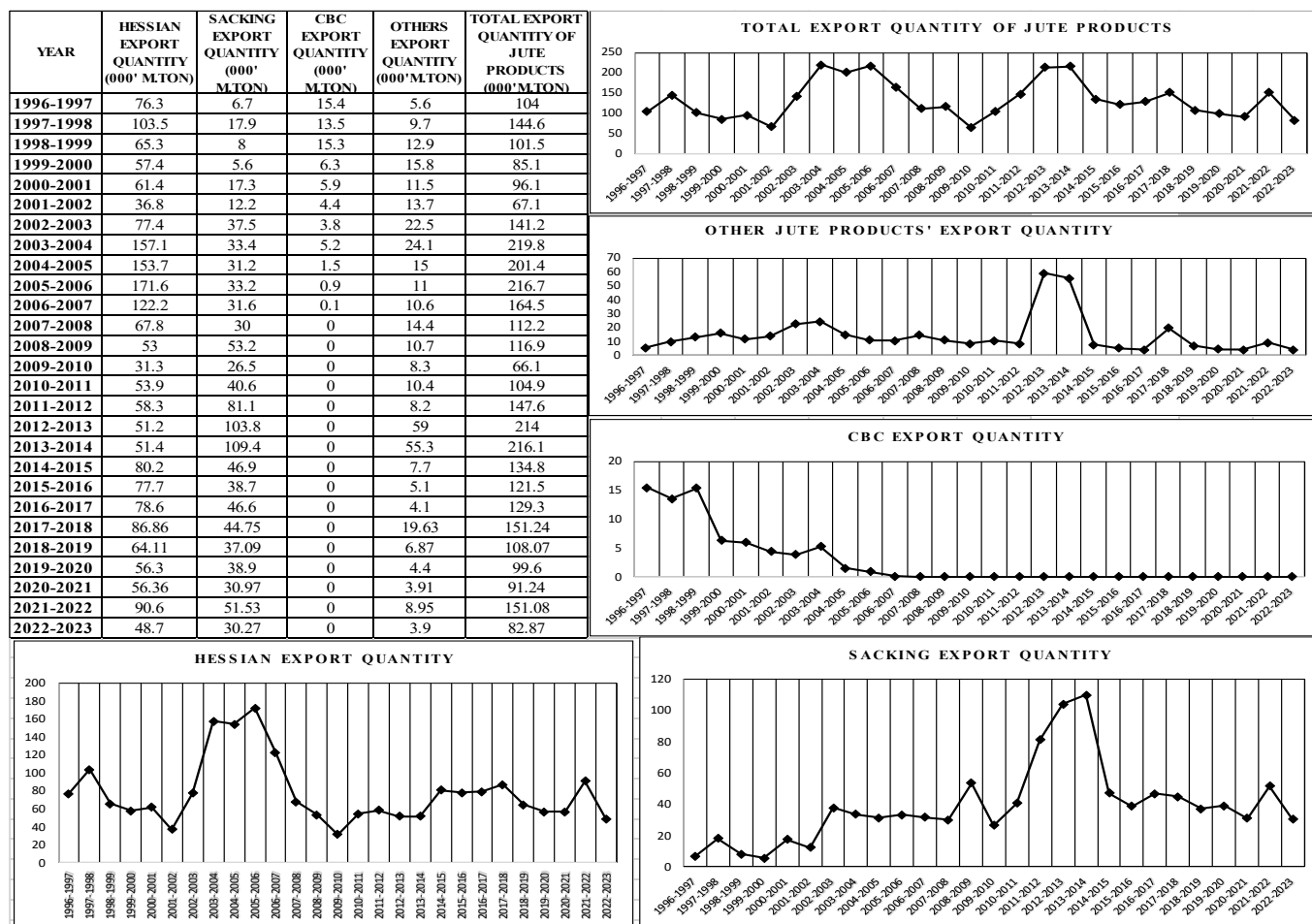
The graphs depict India's jute goods production trends, revealing a worrying decline across most categories except Sacking. Of particular concern is the steep drop in Carpet Backing Cloth (CBC) production, signaling India's failure to fully utilize its jute sector potential. This overall shortfall has led to an increased reliance on imports from the neighboring countries to meet its own domestic demands. Bangladesh's export incentives and cost advantages, such as cheaper labour and subsidies etc., have made its jute products more competitive in the Indian market and ultimately, forced the situation to become more vulnerable in recent times. Despite regulations outlined in the Jute Packaging Materials (JPM) Act aimed at boosting domestic production, enforcement remains lax, and thereby, leading to the following questions.

Critical Facets:

- What factors contribute to the decline in production for main jute products, excluding Sacking?
- Are the implemented measures from the part of the Government effectively addressing these issues?
- Can reliance on a single product like Sacking sustain the Indian jute industry in the long term?
- What are the reasons behind the persistently poor performance of CBC production?

The subsequent section will delve into the export performance of the Indian jute industry, which is contingent upon its annual production of jute goods after satisfying its domestic consumption needs.

Exhibit 4: Export of Jute Goods from India



[Source: Office of the Jute Commissioner, Government of India, Ministry of Textiles]

India's jute goods export performance has been consistently poor and trending downwards over the study period, with only a brief positive movement observed in Sacking and other jute products in 2014-2015. However, this improvement was short-lived, and the overall export scenario worsened thereafter. Notably, the market for carpet backing cloth has completely collapsed since 2006-07. Studies, further indicate that a number of Indian jute mills still rely on traditional, cost-intensive production methods, compounded by outdated infrastructure, hindering total production output ultimately. While the government has established organizations and legislative councils to safeguard the industry and promote awareness of jute products, the export performance remains disappointing.

Critical Facets:

- What are the precise internal and external factors contributing to this dissatisfactory export trend in the Indian jute industry?
- Are the implemented measures effectively addressing the existing challenges?
- Can the decline in the export performance be attributable only to product quality or due to a broader decrease in international demand for traditional jute products?
- What factors influence the correlation among the total annual output of jute mills, India's yearly domestic consumption, and annual export performance in jute products?
- Are the other Asian countries like China and Bangladesh capturing India's share of the international jute goods market? If so, what might be the underlying causes and potential solutions?

The next section highlights different happenings that are being undertaken in India to create an environment so as to give this age-old industry a boost to sustain for the years to come.

Section (iii): Recent developments in Indian jute sector

The developments in Indian jute sector can be examined under four thrust areas viz. a) jute agriculture b) jute mills or companies c) laws and regulations and d) research and development initiatives. The Ministry of Textile, Government of India is the main authority dealing with these issues in Indian jute sector. Since independence, the Government of India has taken various initiatives for the all-round development of Indian jute industry and trade. It has set up a number of Subordinate Offices (Office of the Jute Commissioner), Advisory Boards (Jute Advisory Board), Statutory Bodies (National Jute Board), Public Sector Undertakings (Jute Corporation of India, National Jute Manufactures Corporation, Birds Jute and Exports Limited) and Research Institutes (Indian Jute Industries Research Association, Institute of Jute Technology, Central Research Institute for Jute Allied Fibres, and National Institute for Research in Jute and Fibre Technology) under the supervision and control of the Ministry of Textile to regulate and monitor the state of Indian jute sector from time to time and to facilitate necessary improvements. These organizations act as key nodal agencies under the Ministry of Textile, Government of India, implementing schemes and policies to support the Indian jute sector and enhance the welfare of its workers. The National Jute Board Act (2008), Jute Packaging Materials Act (1987), The Jute Manufactures Cess Act (1983), Essential Commodities Act (1955), Jute Packaging Materials Rules (1987), National Textile Policy (2000), National Jute Policy (2005), National Fibre Policy (2010-11), Investment and Industrial Policy of West Bengal (2013), and West Bengal Textile Policy (2013-18) are noteworthy in this regard.

Various schemes, acts, policies, and rules have been implemented to enhance the wellbeing of different sectors. For instance, in 1971, the Government of India introduced the Minimum Support Price (MSP) scheme for the jute agricultural sector, aimed at assisting jute cultivators. The Jute Corporation of India was established as the price support agency for jute, fixing minimum support prices annually to safeguard farmers' interests. Additionally, initiatives like the National Jute Policy (2005) introduced programs such as the Jute Technology Mission (JTM) to further support the Indian jute sector. Initially approved for 2006-07 to 2010-11, the Jute Technology Mission comprised four mini missions. Subsequently, the Government of India extended its implementation period to 2012-13. Mini Mission-I targeted for advancing agricultural research and development to improve jute yield and quality. Mini Mission-II aimed to apply improved technology and agronomic practices in production and post-harvesting

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phases. Mini-Mission-III facilitated market linkage for raw jute across all jute-growing states in India. Mini Mission-IV targeted the modernization of jute mills, skill upgrading, and promotion of the jute market and exports. The *Exhibit* below illustrates the developmental and administrative activities undertaken by the Government of India through its nodal agencies in the Indian jute sector from time to time.

Exhibit 5: Developmental and Administrative Initiatives in Indian Jute Sector

Under the Supervision and Control of the Ministry of Textiles, Government of India	Organization	Main Activity
	<i>Jute Advisory Board (Advisory Board)</i>	Established to advise on jute sector development under the Jute and Jute Textiles Control Order-2000, the Board was reconstituted in 2014 for two years. It was abolished in August 2020, aligning with the vision of "minimum government and maximum governance".
	<i>Office of the Jute Commissioner (Subordinate Office)</i>	The Jute Commissioner oversees the development and promotion of India's jute industry, handling both regulatory and developmental functions. Responsibilities span from raw jute marketing to the production of jute goods, including the development of machinery and accessories for jute manufacturing.
	<i>National Jute Board (Statutory Bodies)</i>	The National Jute Board (NJB), established under the National Jute Board Act of 2008 and effective from April 1st, 2010, replaced the Jute Manufactures Development Council and the National Centre for Jute Diversification. NJB primarily promotes the production of high-quality raw jute and aims to enhance its productivity.
	<i>Jute Corporation of India Limited (Public Sector Undertakings)</i>	Established in 1971, JCI is a Government of India enterprise and the Ministry of Textiles' official agency for implementing the MSP policy for jute producers. It also acts as a stabilizing force in the raw jute market.
	<i>National Jute Manufactures Cooperation Limited (Public Sector Undertakings)</i>	Incorporated on June 3, 1980, as a wholly owned Government of India undertaking, the National Jute Manufactures Corporation Ltd. (NJMC) procures raw jute from JCI. It manufactures jute sacks, supplying them to government food procurement agencies under production control orders issued by the Jute Commissioner's office.
	<i>Central Research Institute for Jute and Allied Fibres (Research organisation)</i>	Oversees the development of improved varieties and technologies for the production and protection of jute and allied crops.
	<i>Indian Jute Industries' Research Association (Research organisation)</i>	Provides research and development services to the Indian jute industry and government agencies.
	<i>National Institute of Research on Jute and Allied Fibre Technology (Research organisation)</i>	Carries out extensive technological research on jute and other long vegetable fibers.
	<i>Institute of Jute Technology (Research organisation)</i>	A leading institute responsible for organizing jute technology courses.

Source: www.texmin.nic.in

The above mentioned research organizations functioning under the Ministry of Textile, Government of India, for the advancement of the Indian jute industry, now require a brief introduction on their research endeavors and tangible outcomes.

Since its establishment in 1947, the Central Research Institute for Jute and Allied Fibres (CRIJAF), earlier known as Jute Agricultural Research Institute (JARI), has played a decisive role in increasing jute productivity in India. By 1960-61, India achieved self-sufficiency in jute production, thanks to CRIJAF's efforts spanning various fields such as plant breeding, agronomy, entomology, and more.

Founded in 1937, the Indian Jute Industries' Research Association (IJIRA) is a leading institution dedicated to jute and allied fibers. It conducts fundamental and industrial research, provides technical consultancy to jute mills, and offers testing services with recent advancements including eco-testing facilities.

Since 1938, the National Institute of Research on Jute and Allied Fibre Technology (NIRJAFT) has led technological research in India's jute sector. Its divisions focus on quality evaluation, mechanical and chemical processing, and technology transfer to improve the quality and efficiency of jute and its allied fibers.

The Institute of Jute Technology (IJT), set-up in 1947, focuses on knowledge dissemination and training in jute technology. It also provides testing and technical services to jute mills while exploring diverse applications of jute products.

A detailed list of completed and on-going research works initiated by these organizations in Indian jute sector is shown in the *Exhibit* below.

Exhibit 6: Research and Development Activities in Indian Jute Sector

Name of the Organization		Research and Development Activities
Indian Jute Industries' Research Association	COMPLETED PROJECTS	Assessment and enhancement of the quality of jute fiber.
		Development of environmentally friendly methods for processing jute and related fibres.
		Development of efficient and cost-effective ways for jute fibre processing.
		Modern machinery and equipment setup for processing jute and testing its quality.
		Awareness raised for jute fibre-process-product relationship and blending of jute and other natural fibres to be used for home textile application.
		Jute diversified product designing
		Application and testing of instruments for processing and quality control of jute fibre.
		Production of Jute and /or natural fibre based green/bio-composites.
		Promotion and application of Jute Geo-textiles, Jute Agrotexiles.
		Value enhancement of jute products through the application of multifunctional high-end finishing.
		Eco-standards development and implementation for jute products and its compliance.
	PIPELINE PROJECTS	Seventeen new R&D projects, recently approved by the Research Advisory Committee, are in the pipeline. These projects focus on developing innovative process technologies, products, and testing instruments for jute and other allied natural fibers.
Central Research Institute for Jute and Allied Fibres	COMPLETED PROJECTS	High quality seed production.
		JBO1, JBC5, JRM3, JRO2407 are a few to mention such new types of JAFs
		Seventeen germplasm lines of tossa jute have been found to have superior fiber quality compared to the best check variety, JRO 878.
		In the non-traditional jute seed growing areas of Purulia district (Kashipur block) in West Bengal, a productivity of 6 to 8.5 quintals per hectare of quality jute seeds is achieved.
	ONGOING PROJECTS	Application and testing of Biotechnology for JAF quality improvement.
		Evaluation of Productivity and Nutrient Management in Selected Jute-Based Cropping Systems
		Impact of Sulphur and Potassium Application on Yield and Quality of Jute Seed.
		Developing strategy for controlling stem rot disease of jute.
		Identifying the sources and mechanism of resistance against major pests of jute.
		Establishing Economic Injury Levels for Single and Multiple Pests in Jute.
		Evaluation of Multiple Cropping Sequences Based on Jute in Farmers' Fields Across Key Jute-Growing Districts of West Bengal.
		Genetic Examination of Stem Rot Resistance in Jute.
		Creation of suitable processing technology for clothing made from flax or jute fibers is essential.
National Institute of Research on Jute and Allied Fibre Technology	COMPLETED PROJECTS	Designing bio-adhesives derived from the cell-wall polymers of jute and ramie fiber crops is a significant development.
		Creation of winter garments using jute as a primary material is an intriguing avenue for development.
		Designing natural fiber-based geotextiles and deployment systems to safeguard riverbanks and enhance soil stabilization is a vital area of development.
		The innovation in producing fiberboards from jute plants is an exciting field of development.
		Exploring the utilization of jute-based composites for industrial applications represents a promising avenue.
		Creating a PLC-based process control system tailored for jute industries is an essential aspect of advancement in the field.
		Adapting and enhancing jute spinning machinery represents a crucial aspect of technological evolution in the jute industry.
		Harnessing energy from jute and agro-residue biomass holds significant promise for sustainable energy.
		Designing a user-friendly jute grading system is pivotal for ensuring efficiency in the grading process.
		Investigating the bending, frictional, and electrical characteristics of jute materials is essential for understanding their mechanical and electrical properties, contributing to their diverse applications.
	ONGOING PROJECTS	Creating an electronic color and luster meter tailored for jute and mesta fibers is crucial for precise quality assessment and standardization in the industry.
		The development of an expert system tailored for analyzing defects in jute fabrics during inspection is a critical step towards efficient quality control and optimization in the jute industry.
		Development of coated and laminated products based on jute.
		Enhancing the functionality of jute textiles through the application of appropriate nanoparticles represents an innovative approach to improve their performance and value in various applications.
		Employing eco-friendly methods to print jute using natural dyes is a sustainable approach that aligns with environmental consciousness and promotes the use of renewable resources.
		Jute sticks are carbonized, chemically activated, washed, and dried to produce activated carbon with increased porosity and surface area.
		Jute-based decorative fabric is designed, developed, and disseminated for various applications, blending sustainability with aesthetic appeal.
		The Institute plays a pivotal role in nurturing human resources in both centralized and decentralized sectors of the jute industry, supporting its diversification efforts. Additionally, it provides crucial testing, inspection, and technical services to enhance the quality and efficiency of jute and allied industries.
		Furthermore, the faculty engages in impactful applied research projects, enriching the industry with innovative solutions and insights.
Institute of Jute Technology	RESEARCH ACTIVITIES	

Source: Ministry of Textile, Government of India, National Jute Board

The above provided *Exhibit* presents a glimpse of both completed and ongoing research endeavors in the Indian jute sector since independence.

In addition to highlighting the critical issues, requiring further exploration in the Indian jute industry, this study also unveils some fundamental problems, inherent to the industries, reliant on climatic raw materials and human labour. While some challenges may be ubiquitous across such sectors, but, those directly contributing to the recent downturn in performance and may seek special attention, are mentioned below.

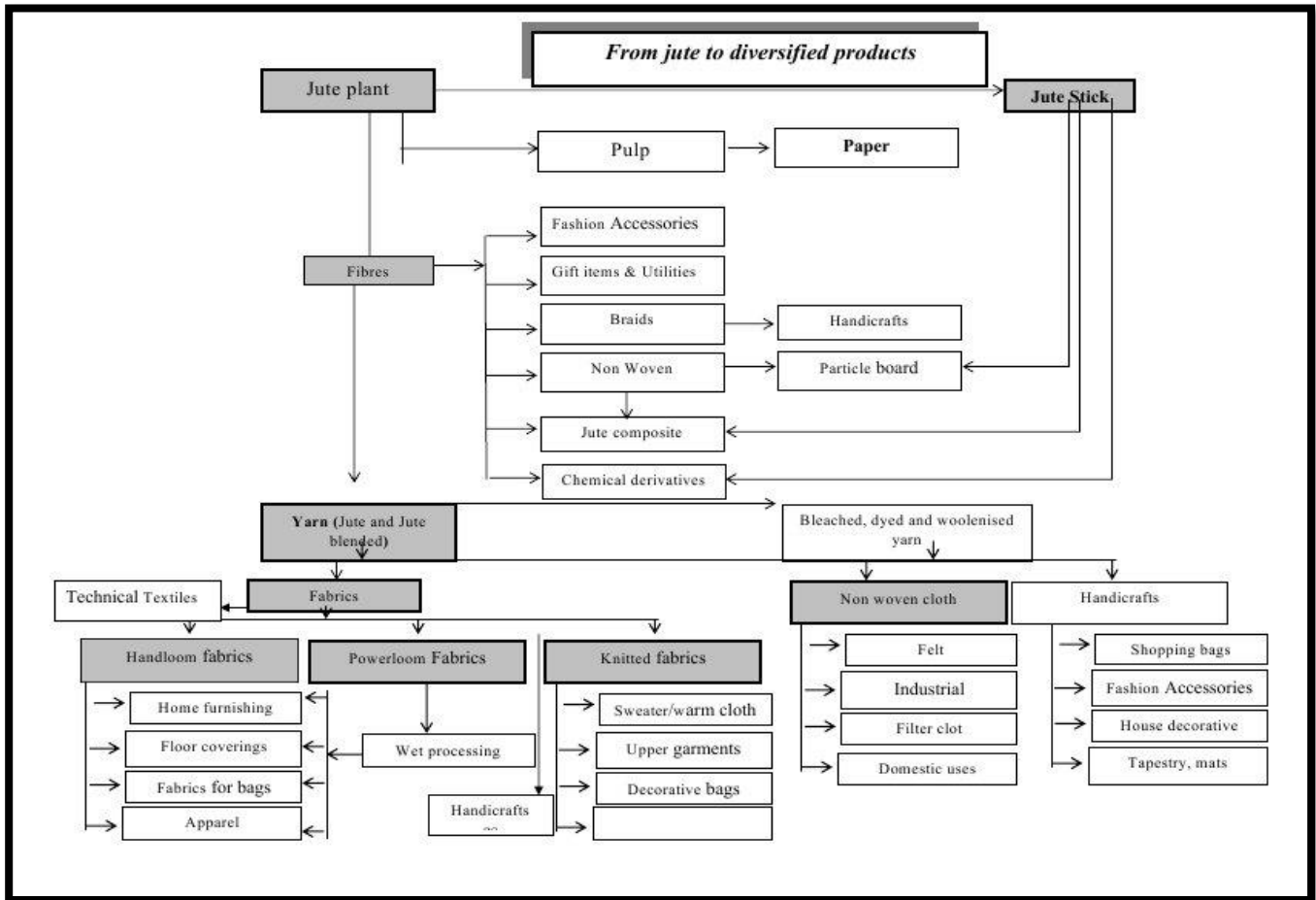
1. Competition from the neighboring nations poses a serious challenge here, with undivided Bengal's jute monopoly getting disrupted during post-partition. Substitutes such as paper, cloth, and plastic have further dampened the global demand for Indian jute goods.
2. Modernization-lags, characterized by outdated machinery and labour-intensive methods, are to some extent responsible for compromising the quality and volume of jute goods in India.
3. Elevated costs of finished products stem from antiquated manufacturing processes, machinery, inefficient operations, and pricey raw materials in comparison to those of its neighboring competitors may be responsible for the diminishing profitability of the industry.
4. Infrastructure hurdles like transportation constraints, power shortages and water supply etc. in jute mill zones may hamper production capacity utilization.
5. Public unawareness regarding eco-friendly jute products not only diminishes domestic demand in India but also adversely impacts upon the international market demand.
6. Marketing and promotional efforts for jute products may not be sufficient enough to stimulate domestic interests in eco-friendly jute products, and most importantly,
7. Labour disputes between mill owners and trade unions trigger strikes, lockouts, layoffs, and closures, and thereby, severely impeding the industry's advancement.

Though predominantly common and shared by various other manufacturing sectors, proactive supervisory and compliance measures could have lessened these effects. Despite these hurdles, the Indian jute industry remains capable of rejuvenation. As one of the oldest sectors, it still offers substantial job prospects and showcases adaptability in transitioning from conventional to diversified production, laying the groundwork for its resurgence.

Part (C): Future scope and opportunities of Indian Jute Industry

In today's environmentally conscious industrial landscape throughout the globe, there is a growing emphasis on eco-friendly projects and biodegradable products development with jute standing out as a prime example. Developed and developing economies across the World, are, therefore, steadily progressing towards achieving green-economic status in terms of developing and using green-products and thereby, reducing their carbon emissions. India is not an exception to this, and Indian jute industry has thus been regaining its popularity and importance once again. Known for its biodegradability and eco-friendliness, jute has now been used in a variety of applications beyond its traditional role in packaging industries like sugar, cement, and food grains. Jute Diversified Products (JDPs) have emerged, encompassing fashionable household items such as mats, bags, fabrics, carpets, and curtains, as well as non-traditional items like jute geotextiles, non-woven felts, jute-reinforced composites, pulp and paper, particle boards, shopping bags, handicrafts, fashion accessories, and apparel. These innovative and green-product applications are gaining prominence internationally, considering the versatility and sustainability of jute. The subsequent *Exhibit*, hence, showcases the extensive array of diversified jute products.

Exhibit 7: Jute Diversified Products



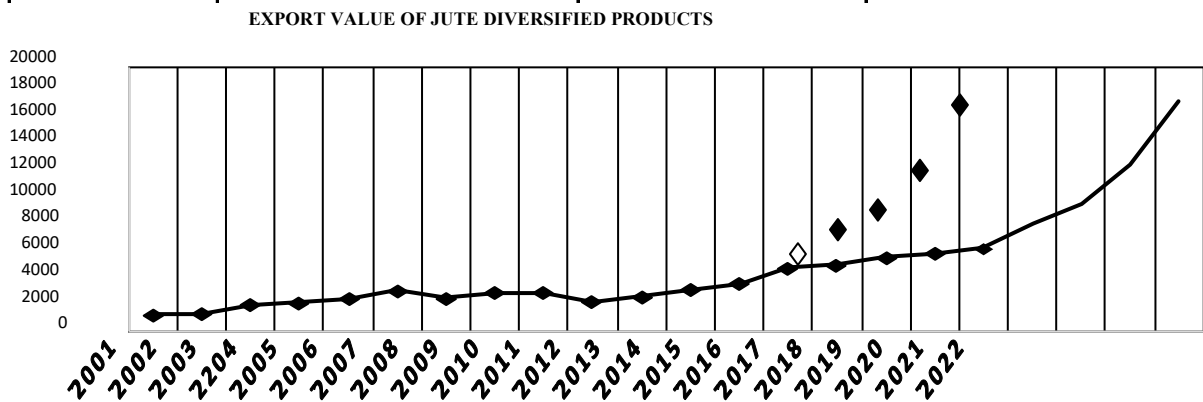
[Source: International Jute Study Group]

India can easily have strategic advantages in the international market by supplying diversified jute products which are gaining prominence in the international market in recent years. Transforming select mills can accelerate this shift for enhancing the production of JDPs. Such transformation is capital-intensive, and hence, joint ventures with developed nations besides government supports, may also gain the required financial and technological advancements. For example, from 2010 to 2014, the joint initiative between the Margdarshak Development Services (MDS) and Traidcraft UK to implement an EU-sponsored project in West Bengal to promote eco-friendly practices in the jute industry, has demonstrated positive outcomes for the industry. Further, as jute holds immense potential for diversification across various industries, general awareness for using jute and jute based products in related industries must be appreciated through organised workshops, seminars, field-based trainings etc. In home textiles, it can be combined with other fibers to produce items like tablecloths, cushion covers, and curtains. Its unique properties such as high strength, bulkiness, sound and heat insulation, and low thermal conductivity, make it particularly well-suited for technical textiles. Jute can also be a savior to environmental degradation in several ways. For example, jute geotextiles play a crucial role in controlling soil erosion, consolidating vegetation, agro-mulching, riverbank protection, and even in road construction, with steadily rising global demand. Moreover, in the non-woven sector, jute is noticeably replacing synthetic fibers in automotive and footwear manufacturing industries. As both the automobile and footwear manufacturing sectors are rapidly becoming involved in developing and promoting eco-friendly and green-product based industrial output, jute may find an alternative and profitable route in these sectors,

as well. Besides, as a sustainable alternative to wood, ply-woods, jute composites are now being used in the production of sheets, boards, doors, windows, furniture, and corrugated sheets. Furthermore, as a renewable fiber, jute is gaining attention in pulp and paper production, offering a potential replacement for wood and bamboo and other basic raw-materials. Environmental concerns are also driving a shift away from wood in construction and furniture, making jute particle board an attractive substitute. Jute's versatility extends to industries like handicrafts, fashion accessories, sweaters, felt, tobacco, and more, underscoring its vast potential for future growth. Reviewing the Indian jute industry's performance in trading JDPs internationally is now imperative.

Exhibit 8: Export of Jute Diversified Products

YEAR	EXPORT VALUE OF JDP (RS.MILLION)	YEAR	EXPORT VALUE OF JDP (RS.MILLION)
2000-2001	1310.2	2011-2012	3199.01
2001-2002	1355.07	2012-2013	3635.93
2002-2003	2031.65	2013-2014	4838.76
2003-2004	2233.72	2014-2015	5085.7
2004-2005	2537.47	2015-2016	5624.01
2005-2006	3125.92	2016-2017	5909.55
2006-2007	2564.84	2017-2018	6314.94
2007-2008	2985.52	2018-2019	8155.1
2008-2009	2945.36	2019-2020	9634.36
2009-2010	2308.28	2020-2021	12607.91
2010-2011	2697.48	2021-2022	17439.52



[Source: www.jutecomm.gov.in, www.texmin.nic.in/sector-industry/jute]

The above displayed *Exhibit*, illustrates an overall increasing trend in export performances of JDPs from India to the international market, instilling new hope and opportunities for the country's jute industry to emerge as the leading producer and exporter of JDPs in near future. Notably, the export value witnessed a modest 1310.2 Million during the early 21st century, but from 2010-2011 onwards, a consistent upward trajectory is evident, with significant achievements observed in recent years.

Despite enduring challenges, the jute industry in India retains substantial potential to reclaim its former glory. Addressing existing obstacles, as suggested by *Karthik and Ramya (2012)*, could spur considerable growth in the jute industrial economy.

5. Conclusions and Recommendations

The paper has thus been able to provide a critical review of the Indian jute industry's historical evolution, current status, and future prospects. It explores the journey of the Indian jute industry across three significant periods - ancient India, the British era, and post-independence phase. Presently, the industry's status is assessed through its recent trends in raw jute production, number of operational mills, regulatory developments, research initiatives, and ongoing challenges. Future prospects are highlighted through its potential for diversified jute products.

While critically revisiting the past experiences, present experiments, and future expectations of the Indian jute industry, this study has successfully identified several major issues for further interventions. The most important ones are:

- ***Post-Partition Losses and Strategic Planning***

The Partition resulted in the loss of fertile land for jute cultivation and ownership of several jute mills - a loss that cannot be compensated. However, India can now focus on strategic plans to increase the land for jute cultivation. Using unused or wasted land could be a viable solution, but turning this potential into reality presents significant challenges. It requires scientific methods to make infertile land fertile, adequate water supply, rainwater harvesting, and other infrastructural supports like transportation and electricity. Additionally, efforts should be made to reallocate land proportionately for jute cultivation and other seasonal crops. Simply increasing productivity by using high-yielding jute seeds may not be sustainable in the long run.

- ***Decline in Production and Export***

Historically, India has not been a leading exporter of jute and jute products due to high internal demand. However, the recent decline in India's position as the top producer of raw jute and jute products is critical for the industry's future sustainability and requires immediate intervention. Government initiatives need regular governance and supervision to ensure their effectiveness, as current expectations and experiences are not aligning. Most importantly, among the four core jute products, CBC (Carpet Backing Cloth) has performed the worst in terms of production and export. This issue needs immediate attention and resolution.

- ***Closure of Jute Mills***

The closure of jute mills is a critical concern. Despite having 111 operational mills by 2024, the number of closed mills has remained the same or even increased. This is particularly troubling as six of the closed mills — Alexander, Khardah, Kinnison, National, RBHM, and Union are government-owned. This could send a negative signal to other stakeholders in the jute industry.

- ***Regulatory and Financial Oversight***

Numerous regulatory, research-oriented, social, and organizational schemes have been implemented by the government in the post-independence era. However, there is a need for stringent regulations and supervision to ensure jute mills maintain and disclose financial and non-financial information regularly. Proper oversight could have led to a different situation.

- ***Market Competition***

Competition is not inherently harmful, in fact, it often drives better performance and enhances efficiency and capabilities. The rising competition from the neighboring countries in the international jute market should be seen as a catalyst for strategic change and development. By focusing on improving efficiency, developing new products, and fostering innovation, India can regain its own market share and create new demand, and thereby surpassing its competitors.

Amidst these challenges, India's production and export of JDPs offer some relief, as JDPs have gained potential international market share. However, relying solely on JDPs is insufficient to restore the industry's former glory. However, it is also true that the demand for traditional jute products has declined both nationally and internationally due to the availability of cheaper synthetic alternatives and the global recession, of course, is another reason causing

significant harm to the industry and resulting in numerous mill closures and reduced production. Therefore, to survive, the Indian jute industry must innovate and expand its market through diversified products while also regenerating demand for its traditional jute products by promoting their advantages in the heavy industries, specifically. Additionally, alternative uses of jute in industries like aviation and automotive, where eco-friendly materials are now being adopted, present further growth opportunities for this industry and India must excel in these segments as well. Further, investigating into the financial health of the Indian jute mills is also crucial to understand their declining performance and closures and developing effective strategies for their revival.

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Opportunities of Food Processing Industry – A Study with Reference to Select FPU's in West Bengal

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Abstract

The Food Processing Industry (FPI) not only reduces agricultural waste but also increases employment opportunities and doubles farmers' income by linking agriculture and industry. FPI extends the shelf life of food products. FPI has a significant impact on the economy of India as well as West Bengal also. The sector also attract sizable amount of Foreign Direct Investment (FDI). FPI has huge opportunities in West Bengal like availability of raw materials, huge supply of unskilled workers, strong demand of the food products in the local market and government support for the industry. Using a primary survey, the study attempted to investigate the FPI's potential in West Bengal. Additionally, the study provided the Food Processing Units (FPUs) with some insightful recommendations for enhancing their future performance.

Keywords: Food processing, opportunities, raw materials, FDI, workers

1. Introduction

India is a nation that relies heavily on agriculture and has the second-largest agricultural area in the world. In terms of food product production, it is ranked second in the world, behind China (Murthy & Yogesh, 2014). India became self-sufficient in agricultural products and the agricultural sector was reformed in a significant manner due to the Green Revolution. The many regions of the country produce a variety of fruits and vegetables. Pulses, mangoes, cashews, milk and buffalo meat are available in ample quantities in India and a significant quantities of sugarcane, wheat, rice, and tea also produces in India (Food and Agricultural Organization (FAO), n.d.). FPI's contribution to India's Gross Value Added (GVA) makes it one of the country's most significant industrial sectors.

This sector generates huge employment opportunities and also attract sizable amount of Foreign Direct Investment (FDI). Products made from processed food are in high demand both domestically and internationally.

Food processing is a method or process of converting raw foods into edible food products to meet future demand and make them available all year long. The FPI establishes a crucial connection and cooperative partnership between industry and agriculture, the two foundations of the economy. It helps reduce agricultural waste and creates employment through Micro, Small and Medium Enterprises (MSMEs).

The FPI has a major effect on the economy of West Bengal as well. The state is the top producer of rice, pineapple, brinjal and cabbage and second-biggest producer of vegetables, tea, meat, fish in India (MOFPI, 2023). Food processing industry has the adequate supply of raw materials, cheap labours, government

support and enough demand of processed food in West Bengal. These essential elements have created enough opportunity for the FPI to flourish in future.

2. Literature Review

Vellu and Kathar (2016) have mentioned in their study that raw materials for all sub-categories of food processing units are abundantly available in India throughout the year. Sakina (2019) tried to identify the recent trends in the FPI and evaluated the government initiatives to promote the industry. She also attempted to pinpoint the issues impeding the industry's expansion and offered solutions to get beyond them in order to advance it. They pointed to the notable growth and change in India's food processing industry over the last few years, as well as the dominance of unorganized industries in the FPI. They were aware of the main challenges that Indian food processing industries faced, including the lengthy supply chain, inadequate infrastructure, incompetent human resources, loose adherence to quality standards, etc. The world's sixth-largest food and grocery market is found in India. The local market has a high demand for processed food items. The growing urban population will raise the demand for processed meals in the upcoming years *observed by Shukla et al. (2020)*.

Singh and Surasani (2020) pointed out that modern lifestyles are driving up demand for processed food, but the nation's unemployment rate is also rising. They suggested that young people may take advantage of the opportunity for entrepreneurship in this sector. It was also stated that the fish processing industry has the potential to resolve all the problems of fish marketing, post-harvest losses and create new employment opportunities. Shanmuganathan et al. (2020) have mentioned in their study that the government has loosened FDI regulations and made it possible for 100% of investment possibilities to be made in FPI. They also concluded that food processing facilities can enforce strict quality and hygiene standards and safeguard consumer health by implementing food safety and quality assurance procedures. Tomar and Kaur (2020) conducted their study to examine the challenges of the Indian spice industry in India. Flavours are produce in huge quantities in India and also exported to other countries. The exchange of flavours became crucial in determining how countries would cooperate financially. Suyanto et al. (2021) conducted their study to inquire about the effects of age, size, exports and imports on the technological progress of Indonesian food processing firms. They observed that while the company's age, imports, and exports all significantly contribute to its technological growth, the company's size has a minor but favourable effect. Das and Das (2022) have mentioned in their study that demand for Indian food products is always high in the international market. Indian processed food items occupy an important place among all the export products of India. Processed raw meat and fish, eggs, spices, basmati rice, cereals, oils, fish as well as meat preparations, jaggery, sweets, coffee, tea and other beverages have become very popular in the world.

Shenbhagavadivu et al. (2022) pointed out the supply chain problem in the FPI and additionally, they assessed how supply chain management affected the FPI's effectiveness. They have mentioned the schemes that are available to assist companies in the food supply chain in upholding their obligations to customers, the environment and social wellbeing while also assisting them in exceeding their own standards of excellence. Bngalara and Maddala (2022) have observed that the expanding urban and young population will lead to an increase in processed food consumption. In order to meet demand, India's food processing industry must invest in infrastructure. Kondepudi et al. (2023) observed in their study that since food processing employs 60% of workers in agriculture and related industries, it is one of Andhra Pradesh's top priorities. They found that while the production of mineral water bottles and spirits performed exceptionally well, the production of macaroni and noodles performed quite poorly. Meena and Sharma (2024) has mentioned that food processing industry is consider as special industry because it has powerful forward and backward linkages with agriculture and export. Globalization, growing affluence, changing dietary

preferences, and a shift toward processed, packaged, ready-to-eat, and functional foods are all creating opportunities for this industry. Export potential, a large domestic market, an unexplored rural market, agricultural diversification, and policy support are further beneficial factors.

3. Research Gap

After thoroughly reviewing of the above literatures, it is clear that over the year, various attempts have been made by researchers and academicians to evaluate the different aspects of food processing industries, but there has been no seminal work on the prospects of the FPI specifically in West Bengal. So, the present study tried to shed light on this unexplored area.

3. The Study's Objectives

The study's objectives are:

1. To assess the current state of India's food processing sector.
2. To investigate the opportunities for West Bengal's food processing sector.

4. Database and Methodology

The majority of the study's data came from primary sources. Additionally, secondary data from a range of sources, including as publications, recommendations, reports, and circulars from various government departments, has been used. Using a standardized questionnaire and direct interactions with the owners of FPU's in a few West Bengal districts, the core data was gathered through a field study.

For this research purpose, the researchers considered 5 sub-categories of FPI i.e. 'Processing and preserving of fruits and vegetables', 'Manufacture of vegetables and animal oils and fats', 'Manufacture of dairy products', 'Manufacture of grain mill products and starches and starch products' and 'Manufacture of other food products' as per the classification of Ministry of Food Processing Industries (MOFPI). Total **204** registered FPU's from different parts of West Bengal were selected for the study i.e. Manufacture of grain mill products and starches and starch products (**105 units**), Processing and preserving of fruits and vegetables (**6 units**), Manufacture of dairy products (**9 units**), Manufacture of vegetables and animal oils and fats (**29 units**) and Manufacture of other food products (**55 units**). The FPU's were chosen using a non-probabilistic convenience sampling technique.

The SPSS software was used in this study to analyze the data from the primary survey. Simple percentages have been used to show and analyze the data. In order to analyze the data, the researcher also used statistical tools including the Chi-square test and Principal Component Analysis (PCA).

5. The Current State of India's Food Processing Sector

India emerged as the world's top producer of oil seeds, cereals, and a variety of fruits and vegetables. India ranks third in fisheries and second in aquaculture production, and it is the world's largest producer of milk (*Ngasotter et al., 2020*). The meat of camel, rabbit, lamb, mithun, yak and Japanese quail is also available in the country. In terms of the share in the global population of water buffalo, cattle, goat and sheep, India ranked first, second and fourth, respectively, in the year 2019 (*Muthukumar et al., 2021*). The nation contributes 7.96% of global fish production in 2020–2021 and is ranked second in the world for farmed fish production, after China (*Ministry of Fisheries Animal Husbandry and Dairying (MOFAHAD), 2022*). India produces the most fruits and vegetables, second only to China (*Sah et al., 2022*). About 20% of the world's milk is produced in India. Other top producers of milk are the United States, the Russian Federation, China, Pakistan, Brazil, and France. (*NDDDB, 2019*). The food processing sector plays a significant role in

India's economy and the Annual Average Growth Rate (AAGR) of this sector is higher than the 'Agriculture, forestry and fishing sectors' and 'Manufacturing sector' (MOFPI, 2023). Millions of people are directly engaged in registered and unregistered FPIs in India. Indian FPIs export varieties of processed and raw food products to the world and earn huge amounts of foreign currency. ***Contribution of the FPI towards the India's Gross Value Added (GVA).***

The Indian economy now heavily depends on the FPI. The FPI has benefited from an adequate supply of raw materials, raising processed food demand and government incentives (MOFPI, 2022). The FPI contributed 1.88% of the total GVA of the country in 2020–21 (MOFPI, 2023).

Scenario of Registered and Unregistered FPI in India

As per ASI reports for 2020, there were 41,485 registered FPIs in India in 2019–20. Whereas, as per the NSSO report for the 73rd round, there were 24,59,929 unincorporated or unregistered units in India in 2015-16 (MOFPI, 2023).

Export Scenario of the FPI

India accounts for more than 2% of aggregate global processed food exports. The country exports raw and semi-processed agricultural and horticultural food products like cereals, fish and other aquatic invertebrates, meat and edible meat offal to more than 100 countries in the world (MOFPI, 2023).

Foreign Direct Investment in Indian FPI

With the exception of products designated for MSMEs, FDI is now allowed for all FPIs up to 100% through the automatic route. After this policy implementation, The Indian FPI has seen a sharp rise in FDI. In 2022–23, a record amount was invested in Indian FPI i.e. 7194.13 crore, which was 1.96% of total FDI inflow in all sectors in India (Ministry of Commerce and Industry (MOCAI), 2023)

6. Analysis of the Opportunities of the FPIs in West Bengal

Food processing units are expanding quickly in West Bengal as a result of several factors, including the accessibility of raw materials, the low cost and lack of labour strikes in this industry, the availability of all types of machinery, the high demand for processed foods in the local market and general government support for the sector. The opportunities of the FPIs in West Bengal found as a result field survey of 204 units are discussed below:

(i) Raw Materials readily accessible for FPI:

For every manufacturing unit, the availability of raw materials is crucial. The expansion of the FPIs depends on the accessibility of raw materials.

Table-1, has shown the status of availability of raw materials for the FPI in West Bengal:

Table 1: Raw Materials readily accessible for FPIs in West Bengal

The unit's raw materials are not accessible in West Bengal	Number of FPIs	Rate of %
Strongly Agree	42	20.60
Agree	36	17.60

Neither agree or disagree	9	4.40
Disagree	49	24.10
Strongly Disagree	68	33.30
Total	204	100.00

Source: Researchers' Compilation

According to 33.30% (68) of the respondents, West Bengal has year-round access to abundant supplies of raw materials. 24.10% (49) of the respondents also stated that raw materials used by their units were available for the whole year. Raw materials are available, but not in sufficient quantities for 17.60% (36) of respondents and 20.60% (42) of respondents accepted that raw materials used in their units are unavailable in the state. Raw materials for rice mills are available in abundance in West Bengal. The raw materials of fruit and vegetable processing units are seasonal in nature and for the wheat processing industry (flour mills), the available raw materials in the state are not sufficient. The raw materials required for oil processing units, i.e. mustard seeds are produced in very low quantities compared to their requirements in the state. As a result, units have to buy mustard seeds from other states of India. As there is an acute shortage of raw materials required for manufacturing pulse mills in West Bengal, these units have to import pulses from other countries and states.

(ii) Disruption of Production in FPU's

The timely delivery of raw supplies is crucial; otherwise, the unit's output could be interrupted.

Table 2: Disruption of Production in FPU's

Disruption of production process due to raw materials	Number of FPU's	Rate of %
Strongly Agree	30	14.70
Agree	35	17.20
Neither agree or disagree	17	8.30
Disagree	59	28.90
Strongly Disagree	63	30.90
Total	204	100.00

Source: Researchers' Compilation

Maximum number of FPU's, i.e., 30.90% (63) very much disagreed with this claim and said that raw material supply to their units is always free from any interruption. Another 28.90% (59) respondents also disagreed and answered that the supply of raw materials required for their units is uninterrupted. However, 14.70% (30) respondents said they face significant disruption while receiving raw materials. 17.20% (35) respondents experienced a slight disruption in raw material supply.

(iii) Availability of Unskilled Labours for FPU's

The source of labours in the FPU's is mainly the local people of West Bengal as well as people from other states like Bihar, Odisha, Jharkhand, etc. People from such states used to come to West Bengal in search for jobs. The availability of unskilled labours in the state has been shown in Table-3:

Table-3: Availability of Unskilled Labours for FPU's

Unskilled labours are not available for your unit	Number of FPU's	Rate of %
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Strongly Agree	27	13.20
Agree	38	18.70
Neither agree or disagree	25	12.30
Disagree	59	28.80
Strongly Disagree	55	27.00
Total	204	100.00

Source: Researchers' Compilation

Unskilled labour is available throughout the year in sufficient numbers for 27% of the units. 28.80% of respondents said that unskilled labour was available for their units. 13.20% of the respondents answered that unskilled labours is available in very small numbers when required for their units. 18.70% of the respondents faced considerable difficulty in procuring unskilled labours at their time of requirement.

(iv) Labour's Strike in FPU's

Labour strike is one of the major issues in the manufacturing industry. Sometimes labours call a strike for the fulfilment of their demands for higher remuneration, health issues, etc. It has been shown in the Table-4:

Table 4: Labour Strike in the FPU's

Labour strike is a major problem for the unit	Number of FPU's	Rate of %
Strongly Agree	18	8.70
Agree	21	10.30
Neither agree or disagree	55	27.00
Disagree	45	22.10
Strongly Disagree	65	31.90
Total	204	100.00

Source: Researchers' Compilation

The majority of FPU's (31.90%) firmly concurred that labour strikes are not a significant problem in their units. 22.10% of respondents replied that their units also never experienced the problem of labour strikes. The labour strike is an acute problem for 8.70% of units. 10.30% of respondents often faced the problem of labour strikes.

(v) Availability of Machinery in West Bengal

Food processing units are gradually shifting their production processes from hand-made to machine-made production process. Different types of machines are available for food processing units. The FPU's in West Bengal uses both fully automatic & semi-automatic machine in the production process. It has been shown in Table-5:

Table 5: Availability of Machinery for the FPU's in West Bengal

All types of machinery used in food processing are unavailable in this State	Number of FPU's	Rate of %
Strongly Agree	24	11.70
Agree	23	11.30
Neither agree or disagree	33	16.20
Disagree	56	27.50
Strongly Disagree	68	33.30
Total	204	100.00

Source: Researchers' Compilation

The above table revealed that 33.30% of the total surveyed FPU's have easily got their domestic or foreign brand machines in West Bengal. 27.50% of the respondents said that the machines they use are available in West Bengal. Some of the machines used in 11.30% units are available in West Bengal and some have to be imported from other states. The machinery used in 11.70% of units are not available in West Bengal.

(vi) License for the Food Processing Units

Food processing units require several licenses before starting their operation like factory licenses, trade licenses, pollution licenses, etc. These licenses are issued or renewed by several departments of the government. The outcome of the survey is as follows in Table-6:

Table 6: Issue or Renewal of Licenses for the FPU's in West Bengal

The government's licensing process is a major obstacle for the unit	Number of FPU's	Rate of %
Strongly Agree	22	10.80
Agree	32	15.70
Neither agree or disagree	22	10.80
Disagree	61	29.90
Strongly Disagree	67	32.80
Total	204	100.00

Source: Researchers' Compilation

32.80% of respondent units never faced any problems getting their licenses renewed by various government agencies in West Bengal. 29.90% of the respondents have successfully renewed or obtained their license. However, 10.80% of respondents reported problematic experiences at the time of getting or renewing their licenses. 15.70% of the respondents said that they also had faced some problems.

(vii) Demand for Food Products in the Local Market

The market for processed foods is growing constantly. The demand for customers is changing as per their changing lifestyles. Now a day, households are showing an interest in ready-to-eat or semi-processed foods that takes less time to cook as well as maintain the taste. The outcome of the survey has been shown in the following Table-7:

Table 7: Demand for Finished Food Products of the FPU's in the Local Market

The local market's demand for your unit's food goods is declining	Number of FPU's	Rate of %
Strongly Agree	17	8.30
Agree	22	10.80
Neither agree or disagree	25	12.30
Disagree	67	32.80
Strongly Disagree	73	35.80
Total	204	100.00

Source: Researchers' Compilation

35.80% of the FPU's were claimed that their the local market has a significant demand for food products. 32.80% of respondents reported that their food products are also in demand in the market. However, 8.30% of units reported that the demand for their food products in the market is decreasing very fast and 10.80% of respondents stated that there is not enough demand for their products in the market.

(viii) Effect of Foreign Brands on the Market

Numerous foreign companies have entered the Indian food market after the announcement of 100% FDI in the food processing sector by the Central Government. They are also capturing the Indian food market. The result has been shown in the following Table-8:

Table 8: Impact of International Brands on Indian Food Product Sales in the Market

The market sales of your food products are unaffected by food products from foreign brands	Number of FPU's	Rate of %
Strongly Agree	129	63.24
Agree	44	21.56
Neither agree or disagree	28	13.73
Disagree	2	0.98
Strongly Disagree	1	0.49
Total	204	100.00

Source: Researchers' Compilation

Majority of the FPU's (63.24%) said that foreign-branded food products had no effect on their sales. 21.56% of respondents said that their sales have not decreased due to the entry of foreign units. Only 1.73%

(0.98%+0.49%) of the surveyed units admitted that foreign brands have some influence on the sale of their food products.

Chi-Square Test

A chi-square test has been conducted to examine the association between the declining local market's demand for unit's food products and the effect of foreign brands on Indian food products.

Hypothesis

H₀: Local market's demand for unit's food products are unaffected by food products from foreign brands.

H₁: Local market's demand for unit's food products are affected by food products from foreign brands.

Table 9: The Outcome of the Chi-Square Test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	14.489 ^a	16	0.562
a. 15 cells (60.0%) have an expected count of less than 5. The minimum expected count is .08.			

Source: Researchers' Compilation

The Pearson Chi-Square test has a P value of 0.562, which is greater than 0.05. Thus, the alternative hypothesis has been rejected and the null hypothesis has been accepted. Therefore, the demand for the finished food products of the surveyed food processing units has no association with the effect of foreign brands of food products in the local market. The researcher has selected 5 sub-categories of the FPIs for research purposes. Among them, most of the food products produced by food processing units are rice, pulses, flour and oil. There are very few foreign food processing units that sell such products in Indian or West Bengal markets. Most of the foreign companies' food products available in the Indian and West Bengal markets belong to other sub-categories of the FPIs, such as fruit and vegetable processing, dairy processing, beverages and other food processing. For this reason, the impact of international brands on the local market's desire for Indian food items was not noted by the researcher.

(ix) Political Environment for FPU's in West Bengal

The political environment is also an important factor for any business. Political environment for FPU's in West Bengal has been shown in the Table-10:

Table 10: Political Environment for the FPU's in West Bengal

Political environment of West Bengal is not favourable for FPU's	Number of FPU's	Rate of %
Strongly Agree	18	8.80
Agree	20	9.80
Neither agree or disagree	49	24.00
Disagree	50	24.60
Strongly Disagree	67	32.80
Total	204	100.00

Source: Researchers' Compilation

Majority of the FPU's (32.80%) admitted that the political environment in West Bengal is very favourable for their business. 24.60% of respondents said that they did not face any difficulties in the political environment of West Bengal. Only 9.80% of the total respondents answered that they faced some political problems while operating in West Bengal. 8.80% of respondents feel that the political environment here is not at all favourable for their units.

(x) Government Policies for the FPU's

The Central government and the State government set several policies for FPU's. It has been shown in the following Table-11:

Table 11: Government Policies for the FPU's

Government policies regarding the food processing industry are unfavorable	Number of FPU's	Rate of %
Strongly Agree	22	10.80
Agree	33	16.20
Neither agree or disagree	41	20.10
Disagree	59	28.90
Strongly Disagree	49	24.00
Total	204	100.00

Source: Researchers' Compilation

24% of the respondents feel that government policies related to the FPI's are very favourable to their unit. 28.90% of respondents are also satisfied with the policies of the government. But 16.20% of the total respondents do not think that the government policies are favourable for the FPI's. 10.80% of respondents are dissatisfied with the government's policies.

5.2.2. Analysis of the Opportunities of the FPU's by using Principal Component Analysis (PCA)

In this section, Principal Component Analysis was used by the researcher to examine the responses to 5-point Likert scale questions about FPU chances. The researcher ventured to identify the factors leading to opportunities of the FPU's. These factors provide strength to the units to survive in the competitive market.

(i) KMO and Bartlett's Test

The following Table-12 displays the KMO and Bartlett's test results:

Table 12: KMO and Bartlett's Test for Measuring Sample Size

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.672
Bartlett's Test of Sphericity	Approx. Chi-Square	754.639
	df	76
	Sig.	0.000

Source: Researchers' Compilation

Kaiser-Meyer-Olkin (KMO) value 0.672 means that the study's sample size is appropriate for factor analysis. In Bartlett's test, the chi-square value is 754.639, which is statistically significant. So, an identity matrix is not what the correlation matrix is. Since both outcomes are favorable in this case, PCA can be carried out.

(ii) Eigen Value

Result of total variance has been shown in the Table-13:

Table 13: Total Variance Explained

Comp onent	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulati ve %	Total	% of Variance	Cumulati ve %	Total	% of Variance	Cumulati ve %
1	2.069	20.690	20.690	2.069	20.690	20.690	1.921	19.215	19.215
2	1.557	15.567	35.937	1.557	15.567	36.257	1.708	17.075	36.290
3	1.475	14.753	50.690	1.475	14.753	51.010	1.525	15.245	51.335
4	1.238	12.384	61.387	1.238	12.384	63.394	1.161	11.608	63.143
5	.922	9.217	70.604						
6	.810	8.101	78.705						
7	.780	7.795	86.501						
8	.528	5.277	91.778						
9	.481	4.812	96.590						
10	.341	3.410	100.000						
Extraction Method: Principal Component Analysis.									

Source: Researchers' Compilation

The PCA result is displayed in the table above. Four main components with an Eigen value larger than one have been identified in the investigation. The first rotated principal component has explained 19.215% and the fourth rotated principal component has explained 11.608%, according to the rotation sums of squared loading. The outcome in this instance is 63.143%.

(iii) Analysis of Scree Plot

The eigenvalue versus each component is shown graphically in a scree plot. In the scree plot, components with eigenvalues of one or more are placed above one bar, while those with eigenvalues of less than one are plotted between one and zero. The scree plot of FPU prospect components is displayed in Figure 1.

Figure 1: Scree Plot of the Prospect Components of the Food Processing Units



Source: Researchers' Compilation

It can be seen from the graphical depiction above that four components were displayed above bar 1 and had eigenvalues larger than 1. It may be inferred that the first four components have the greatest explanatory power and the remaining six components account for smaller portions of the overall variance since the line becomes nearly flat after the fourth component.

(iv) Rotated Component Matrix

Understanding the analysis's outcome is aided by the rotated component matrix table. To make them easier to understand, the components are rotated. To create a solution loading matrix that is easier to understand and more meaningful, the first four elements listed in Table 5.14 are used.

Table 14: Rotated Component Matrix

		Component			
		1	2	3	4
V6	Government policies regarding the food processing industry are unfavourable	.847			
V9	Political environment of West Bengal is not favourable for your unit	.791			
V10	The government's licensing process is a major obstacle for the unit	.571			
V3	Labour strike is a major problem for the unit		.817		
V4	All types of machinery used in food processing are unavailable in this State		.775		
V5	Unskilled labours are not available for your unit		.602		
V1	The unit's raw materials are not accessible in West Bengal			.870	
V2	Disruption of production process due to raw materials			.860	
V7	the market sales of your food products are unaffected by food products from foreign brands				-.808

V8	The local market's demand for your unit's food goods is declining				.620
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 4 iterations.					

Source: Researchers' Compilation

Each variable's loading is displayed in the rotated component matrix upon rotation. In this instance, the researcher suppressed the absolute values less than 0.50 by using the option and sub-command. Four elements have been identified by Principal Component Analysis as the causes of FPI issues. There are three variables in the first component, namely (a) government policies regarding the food processing industry are unfavourable (with loading, 0.847); (b) political environment of West Bengal is not favourable for your unit (with loading, 0.791); (c) the government's licensing process is a major obstacle for the unit (with loading, 0.571). The first component reflects, 'Governance and Licensing'.

The second component has 3 variables i.e. (a) labour strike is a major problem for the unit (with loading, 0.817); (b) All types of machinery used in food processing are unavailable in this State (with loading, 0.775); (c) unskilled labours are not available for your unit (with loading, 0.602). The third component reflects, the 'Availability of labours and machinery'.

The third component has 2 variables i.e. (a) The unit's raw materials are not accessible in West Bengal (with loading, 0.870); (b) Disruption of production process due to raw materials (with loading, 0.860). The third component reflects, the 'Availability of raw materials'.

The fourth component has 2 variables i.e. (a) the market sales of your food products are unaffected by food products from foreign brands (with loading, -0.808); (b) the local market's demand for your unit's food goods is declining (with loading, 0.620). The fourth component reflects, 'Market demand'.

The table below summarizes the result of PCA.

Table 15: Summary of the Determinant Factors of the Opportunities Faced of the FPU's

Component	The naming of the Components	Included Variables
Component 1	Governance and licensing	V6, V9, V10
Component 2	Availability of labours and machinery	V3, V4, V5
Component 3	Availability of raw materials	V1, V2
Component 4	Market demand	V7, V8

Source: Researchers' Compilation

7. Conclusion and Recommendations

The potential for FPIs in a few West Bengal FPU's have been investigated in the current study. The food processing units in West Bengal have tried to overcome all the problems through opportunities like easy availability of raw materials, huge supply of unskilled labour, availability of all types of machinery, full cooperation of labours, support of the central and state governments, etc. There is a huge demand for the food products produced by these units in the local market and as a result, the food products of foreign brands have not yet captured much of the local market in West Bengal.

PCA identified three main factors that affect the opportunities of the food processing units in West Bengal, i.e. government and licensing, availability of labour and machinery, availability of raw materials and market demand of products.

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Exploring Religion lens on SHGs participation: A Study on Muslim Community in West Bengal, India

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Abstract

SHG is the platform of social transformation of the underprivileged credit-starved women where the minority like Muslim can get special attention for its inherent vulnerability. The present study, hence, examined the factors motivating Muslim women to participate in SHGs and compared them with those of the non-Muslim community. The cross-sectional study was conducted in Murshidabad, West Bengal. Through PCA, five motivating factors - Self-Development, Socialization, Access to Market, Self-Esteem and Financial Reason were detected behind joining in SHGs amongst, for the first, third and fourth, the Muslim women felt more chance to join in SHGs than their counterparts. Hence, apart from contributing to knowledge, the study can add value in policy framing on Muslim SHGs participation.

Keywords: Participatory Motivational Factors, Religion, Muslim, SHGs.

1. Introduction

In human civilisation, the deprivation of women in collecting basic amenities is supposed to be an outburst of male chauvinism. The socially cornered individuals, hence, face an aggressive challenge in maintaining their livelihoods, which forces them to fall victim to gender inequality (Rowlands, 1997). In this regard, women belonging to any minority community especially Muslim are found to face discrimination and ignorance in every sphere of life as reflected through their nominal freedom in movement, absence in house-hold decision- making power, lack of quality education, health security and overall severe crisis in livelihood maintenance (Ranganath Misra Commission, 2010; Noreen, 2011; Sachar Committee Report, 2006ⁱ). India was found to be the world's third-largest Muslim-majority country (200,000,000) (after Indonesia and Pakistan), with 14.2% of its total population (All India Census Report, 2011ⁱⁱⁱ), of which every third Muslim was found to be subject to the multi-dimensional poverty regime (UN report, 2019^{iv}). Apart from this, the concerned community lacked health promotion, as justified by the data on hospitalization rate in need (3.95%, NSS Report, 2014). Even so, they lacked the power to make a decision regarding the reproductive movement (Kazi, 1999; Noreen, 2011). 65.9% and 75.1% Muslim women were found to be deprived of getting ownership rights of house and land, respectively, in their joint or single name (Ministry of Health and Family Welfare, 2015- 2016). Additionally, 60.7% did not get money for personal use, while 55.5% did not have a bank account in their names (ibid). With the highest illiterate in India, which seemed higher than the national rate (42.7%, All India Census Report, 2011), Muslim women could not avail of decent job opportunities. Echoing this issue, in urban areas, only 15.44% and in rural areas, only 27.91% of Muslim women were employed, compared with 22.65% and 47.74% of Non-Muslim women, respectively (All India Census Report, 2011).

Therefore, seeking a job opportunity that claims no religious binding and has no/low techno-economic strength is considered necessary by the target group of women.

In this regard, a grassroots institution like a Self-Help Group (SHG), a small, economically homogeneous, and affinity group with a solidarity movement against any social crisis, is urgently required to be established for the marginalized poor women, viz. Muslims to ensure their voluntary participation in thrift and credit with flexibility, transparency and autonomy (Noreen et al., 2019). To date, 79,60,383 SHGs have been formed, of which 5.43 lakh SHGs were formed in the last year (up to 28th February, 2022)^v. But as per the latest report of the Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM), Ministry of Rural Development (2022), among the total number of SHG participants in India (8,61,80,718), only 9.08% (78,24,071) are from minority communities. Besides, there is tremendous disparity in Minority participation in India: in some North-Eastern states (Arunachal Pradesh, Nagaland, Mizoram, etc.), no Minority participation was found in SHGs, whereas in some states like West Bengal, Assam, and Bihar, strong participation was found from that community. Hence, participation of Muslim women in SHGs seems stereotyped, facing hindrances due to lack of confidence and awareness, diffident and tradition-bound (Begum & Lakshmi, 2017). Besides, the impact of education, culture, and socio-demographic factors can also be addressed in relation to the intention/motivation of the concerned women to participate in SHGs and thus fulfil their priority requirements (Ohlan, 2020).

Hence, a query may arise regarding the relationship between religion (mainly Muslim) and participation in group activities at the grassroots level, i.e., Self-Help Groups?

In this context, though some previous studies (Kiran et al., 2010; Chhaya, 2013; Bariya et al., 2016) made an attempt to find out common motivational factors behind women's participation in SHGs, no study has been reviewed that expressed the effect of religion, mainly the minority Muslim, on SHGs' participation.

Considering the research question and gap, the present study aims at fulfilling two-fold objectives, namely (i) detecting the motivational factors behind joining SHGs and (ii) assessing the chance of being a member of SHGs from Minority religion like Muslim based on the motivating factors.

Therefore, keeping in view the issues involved, the rest of the paper is designed logically with the Literature Review and Hypothesis Formation, followed by Methodology, Results and Discussion, Conclusion and Practical Implications of the study.

2. Literature Review and Hypothesis Formation

The interventions of SHGs, as primitive institutions for vulnerable section of the society, encourage women participation there and thus help the target group to flourish their full potentiality (Umdor & Panda, 2009; Jain & Mathur, 2012; Arora & Arora, 2012; Poonam & Shukla, 2013; Mondal, 2014; Das & Bhowal, 2013; Maheswari & Goyal, 2014). In this regard, the motivating factors behind women participation in SHGs are found ranging from the basic amenities for livelihood maintenance to standardized work culture, environment and self-development (Poonam & Shukla, 2013; Afza & Sharma, 2019) where in some studies (Manonmani & Prabhakaran, 2011; Poonam & Shukla, 2013), the chance of having financial stability after participation in SHGs is proved as the main motivating factor for some group of women. Basically, through participation in SHGs, the inherent habit of women in terms of their regular savings can be materialized and eventually, with those funds, they can enjoy economic freedom to meet their own and/or familial financial requirements (Manonmani & Prabhakaran, 2011; Poonam & Shukla, 2013; Biswal et al., 2016; Gombe et al., 2016).

In the non-financial sphere, women are motivated to join SHGs to gain social and familial recognition, co-operation, power, and a sense of pride, which they cannot achieve otherwise by engaging solely in household chores (Poonam & Shukla, 2013). Tuning with the nature of other social beings, women also prefer to work in a group where, within a cohesive atmosphere, they can communicate with their fellow members to enhance their knowledge and to share their opinions/views on a common issue (Poonam & Shukla, 2013;

Sudha et al., 2020). Sometimes, the opportunity to acquire knowledge and skills through relevant training institutions (NGOs and others) motivates a specific group of women to join SHGs (Biswal et al., 2016). Now, in addition to accessing socialization, expertise, and regular job opportunities, women in group performance can encounter socio-economic challenges (UNIDO, 2003^{vi}; Geetha & Babu, 2016). This can build up bonding within them and also shape a new social system of community mobilization and collaboration (ibid). In this context, the women who want to fulfil their own wish, freedom in movement and decision-making for their own and/or familial cases, like their men counterpart (Jain, 2003; Vishnuvarthini & Ayyothi, 2016), can get motivated to join in the grassroots group activity. Motivational factors behind women's participation in SHGs include infrastructural benefits such as easy access to raw materials, markets for finished products, and a supportive Government Scheme to implement and sustain group performance (Gombe et al., 2016).

In this regard, women's participation in SHGs can access inspiration from both within and outside their household boundaries, though sometimes the external sources like NGOs, Banks, friends, neighbours, etc., motivate them at higher degree than the internal sources, i.e. from family and family members (Poonam & Shukla, 2013; Afza & Sharme, 2019).

Following the above discussion, the study illustrates the items of motivation in Table 1.

Table – 1
Items of Motivation behind joining SHGs

Factors	Items
Economic	To meet emergencies - E1
	To have control over money- E2
	To have personal income – E3
	To support the family – E4
	To help in unemployment of spouse– E5
Personal	To fulfil own wish- P1
	To be independent and Freedom in decision making– P2
	To be powerful – P3
	To gain knowledge– P4
	To develop personal skill– P5
	To have better utilization of family resources– P6
	To have a sense of pride– P7
	To utilize free time– P8
	To get recognition in the family– P9
	To have cooperation from family members- P1
Social	Motivated by neighbours/friends S1
	To have more social contact– S2
	To working Group/Team, Desire for outside communication and friendship – S3
	To get regular Jobs- S4
Infrastructural	To have easy availability of raw materials– I1

	To access helpful Govt. scheme– I2
	To get Training, Work freedom, good working condition
	To get easy marketing of product - I4
	To enjoy Demand of product– I
	To face competition – I6

Source: Author's own compilation from literature

SHGs thus are accepted as the platform of social transformation of all women of society, where the under-privileged, mainly from the Minority Muslim, are specially recognized for their extreme hardship in livelihood maintenance (Nazeerudin, 2012; Rajagopal, 2020; Ohlan, 2020). The marginalized, credit-starved minority women are motivated by the social activism of SHGs, especially to get rid of their troublesome familial and social lives, which do not allow them to uplift their socio-economic and familial status and self-esteem (Sivakami & Ponnusamy, 2019). As Muslim women are not permitted to enjoy freedom of movement in the outside world, alongside independent decision-making in financial and familial matters, they find SHGs to be places where they can easily become attached and enjoy socialization, independent performance, freedom in personal and family matters and economic freedom (Khan et al., 2020; Sarwari & Srivatsa, 2021, 2021). Additionally, extremely deprived women can express their desire to embark on their entrepreneurial journey with self-confidence and financial independence (Sarwari & Srivatsa, 2021, 2021). Therefore, women from the minority community may be motivated by different factors or by the same factors as other groups of women from socially upward communities to different degrees while joining SHGs. Additionally, their socio-demographic features (age, education, marital status, economic status) may also influence their choice of economic activities, such as simple indoor jobs or challenging jobs (Nazeerudin, 2012; Akehurst et al., 2012; Rajagopal, 2020).

Following the above discussion, the study frames the following hypothesis.

H0: There is no statistically significant relationship between the predictor variables (x), i.e. the motivating factors behind joining in SHGs, along with the socio-demographic features of the participants and the response variable (y), i.e. religion-specific participation in SHGs (Muslim and non-Muslim).

3. Methodology:

Selection of the sample area and the surveyed sample:

Taking references from different reports (Ranganath Misra Commission, 2010; Sachar Committee Report, 2006) and literature on Muslim women in India (Nazeerudin, 2012; Rajagopal, 2020; Ohlan, 2020; Khan et al., 2020), a cross-sectional study was conducted where the state of West Bengal which contained maximum number of SHGs (10,16,376) with 27,65,721 Minority participation (total 78,24,071 Minority participation in SHGs) was selected (Report of DAY-NRLM, Ministry of Rural Development, 2022^{vii}). Further, the study selected its field of operation in Murshidabad, a Muslim-dominated district of West Bengal, which has 66.88% Muslims of the state. Murshidabad held 5 sub-divisions (Jangipur, Kandi, Sadar, Lalbagh, and Domkal). Jangipur had the highest sex ratio (961, against the state's 950) and literacy ratio (79.24%, higher than the state average of 76.26%), with a female literacy rate of 74.99%. Amongst 7 blocks of Jangipur (Farakka, Raghunathganj I, Raghunathganj II, Sagardighi, Samsherganj, Suti I and Suti II), the present study conveniently selected Raghunathganj II, which held 81.97% Muslim population, 1,29,613 Female population (sex ratio 955) and 61.17% literacy rate (All India Census Report, 2011^{ix}). Among the 36 villages of Raghunathganj II, 6 villages were randomly selected, from which a total of 72 SHGs were purposively considered, taking into account the membership of Muslims and non-Muslims (Hindu and Others). Finally, to fulfil the objective of the study, the present study took 730 members stratified into two groups - Muslim

(455) and non-Muslim (275) to capture the responses of both of the groups. Out of the respective respondents, the maximum number of women were found within the 18-27 age group (44.4% Muslim and 58.9% non-Muslim), where 23.06% Muslim and 12.25% non-Muslim women were considered as Illiterate and a huge portion of the respondents were found from Below Poverty Line (BPL) category (85.90% Muslim and 52.57% non-Muslim).

Data Collection Procedure, Measures and Scales

To carry on the cross-sectional study, a primary field survey was conducted on the respective samples from the 2nd week of October, 2023, to the 1st week of March, 2024. Following the findings of several research studies (Biswal et al., 2016; Gombe et al., 2016; Kiran et al., 2010; Waghmore & Kadam, 2010), a questionnaire was structured on the items of motivation behind joining SHGs, e.g., ‘how does the factor, to meet emergency, motivate you to join SHGs?’ etc. The sample participants had to give their opinions in a five-point rating scale ranging from Highly Responsible (5) to Not Responsible At All (1) [5=Highly Responsible, 4=Responsible, 3=Moderately Responsible, 2=Somewhat Responsible and 1=Not Responsible At All]. To assess understanding, a questionnaire was administered to respondents before the primary field survey. A pilot survey was organized on 100 respondents of 10 SHGs of Ranghunathganj II in the month of June 2023. To better understand the questions, the Bengali version was also used. Furthermore, as many respondents in the surveyed area were illiterate or semi-literate (who could only sign), an unstructured interview was also conducted by expert interviewers to collect participants' responses. Respondents were assured that their responses were kept confidential and used for academic purposes only.

Strategy of Analysis

The study's analysis was conducted using the Statistical Package for the Social Sciences (SPSS, version 26.0). Reliability Test was considered to give a final shape of the questionnaire, where, with the result of Cronbach's α (must be ≥ 0.7), selection of the questions was recommended (Hair et al., 2010), while the validity of the questions was tested through review of literature and from expert opinion in this context.

To simplify and reduce the dimensionality of the motivating factors behind participation in SHGs, as shown in Figure 1, the present study opted for Principal Component Analysis (PCA). In this context, PCA was used along with the orthogonal rotation procedure of varimax to summarize the original information using the minimum number of factors and optimal coverage (Joy et al., 2011). Hence, as recommended by Hair et al. (2005), the motivation items with factor loadings less than 0.5 and eigenvalues less than 1.0 were excluded from subsequent analysis. Therefore, PCA was carried on through three consequent processes – (i) Anti-image correlation (items with less than 0.5 on the diagonal axis were deleted); (ii) Extracted communalities (amount of variance in each variable) where values with less than 0.5 were ignored and (iii) Rotated Component Matrices (items with multiple loadings and values less than 0.5 were ignored) (Hair et al., 2005).

Consequently, the study opted for Binary Logistic Regression where the probability of Muslim women becoming members in SHGs in comparison with that of non-Muslim women could be tested as the dependent variable, and the compressed items of motivation along with the socio- demographic characteristics of the participants like Education, Age, and Economic Status were found as independent variables^x.

The study, though, proved its novelty in the socio-demographic background; its limitations should be emphasized while interpreting its results. Firstly, the study purposively selected the district of Murshidabad, West Bengal, on the basis of Muslim domination, though the sample respondents were selected randomly in a large and plausibly representative manner. Secondly, the self-reported data and cross-sectional design among illiterate/semi-literate respondents raised concerns about the results' unbiasedness, though the interviewer used their expertise to cross-question when confusion arose. This effort was based on the

responses from sample participants who sometimes could not prioritize their requirements. Thus, the process increased the likelihood of omitted variables and bias. Thirdly, the study was based on the previous research findings to identify motivational items, which were reduced to dimensions through PCA. Finally, the study restricted its scope to the Muslim community in a specific district due to time and resource constraints, which prevented it from generalising its findings to all Muslim women in other regions and contexts.

Thus, future research may examine the theoretical context across different dimensions, such as among other socially marginalized people, beyond religion, and in states/districts with lower/higher levels of domination. Apart from this, future research can continue on inter-state participation penetration in SHGs and the status of the socially backward community in this context, with respective reasons.

4. Result and Discussion

4.1 Result:

- Reliability Test Result and Responses of the participants on items of motivation:

The present study conducted a reliability test, yielding a Cronbach's α of 0.868 across 26 items assessing motivation for participating in SHGs among all participants. Therefore, the reliability test showed the questionnaire's internal consistency, on which further analysis was based.

Table-2 reflects the variations in responses of the respective participants on the items of motivation where out of 26 items, To meet emergencies (E1), To have control over money (E2), Unemployment of Spouse (E5), To be Independent (P₂) got huge responses in highly responsible category from both Muslim and non-Muslim participants of SHGs, while I2, I3, I4, P6, P10 contained not much responses in their favour from both the communities.

Table – 2

**Response of Muslim and non-Muslim participants on the motivational factors behind joining SHGs
(in %)**

Reasons for joining SHGs	Caste	Not at all	Not Fully Motivated	Fully Motivated
(E1) To meet emergencies	Muslim	2.4	63.1	34.5
	Non-Muslim	1.8	62.7	35.6
(E2) To have control over money	Muslim	1.8	54.1	43.1
	Non-Muslim	2.7	68.4	28.9
(E3) To have personal income	Muslim	2.8	62.3	34.9
	Non-Muslim	4.0	57.7	38.3
(E4) To supplement the income of family	Muslim	1.2	48.7	50.1
	Non-Muslim	3.1	44.0	52.9
(E5) Unemployment of Spouse	Muslim	12.9	58.2	28.9
	Non-Muslim	16.4	57.3	26.2
(Pr.1) Own Wish	Muslim	1.4	36.2	62.4
	Non-Muslim	0	16.9	83.1

(Pr.2) To be Independent	Muslim	0.6	36.0	63.4
	Non-Muslim	0	21.4	78.7
(Pr.3) To be powerful	Muslim	1.4	63.2	35.2
	Non-Muslim	1.3	55.4	43.1
(Pr.4) Gain in knowledge	Muslim	2.0	62.2	35.9
	Non-Muslim	0	60.9	39.1
(Pr.5) Development of Skill	Muslim	2.4	65.7	31.9
	Non-Muslim	0.9	65.3	33.8
(Pr.6) Better utilization of skills and family resources	Muslim	3.6	81.8	14.7
	Non-Muslim	5.8	71.1	23.1
(Pr.7) Have a sense of pride	Muslim	3.8	47.3	48.9
	Non-Muslim	4.4	39.1	56.5
(Pr.8) To utilize free time	Muslim	3.2	59.0	37.8
	Non-Muslim	4.0	46.7	49.4
(Pr.9) To get recognition in the family/society	Muslim	1.4	56.1	42.5
	Non-Muslim	2.2	43.3	44.5
(Pr.10) Availability of help from the family members in household work	Muslim	2.2	65.0	32.8
	Non-Muslim	1.8	69.8	28.4
(SC1) Motivated by neighbors/friends	Muslim	9.9	49.1	40.9
	Non-Muslim	5.3	44.0	50.7
(SC2) Have more contact	Muslim	5.7	39.7	54.6
	Non-Muslim	0.4	25.8	73.7
(SC3) Work in Group/Team 1	Muslim	5.9	47.1	46.9
	Non-Muslim	1.8	37.3	60.9
(SC4) Regular Jobs are not easily available	Muslim	3.2	59.2	37.6
	Non-Muslim	2.2	49.4	48.5
(I1) Easy availability of inputs like raw materials	Muslim	16.2	74.7	9.1
	Non-Muslim	16.9	71.1	12.0
(I2) Helpful Governmental Scheme	Muslim	2.8	49.4	47.9
	Non-Muslim	4.0	39.1	56.9
(I3) Training Facility	Muslim	3.2	42.0	54.9
	Non-Muslim	3.6	24.4	72.0

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(I4) Easy Marketing of Products	Muslim	6.7	84.0	8.3
	Non-Muslim	6.2	81.4	12.5
(I5) Demand of the Product	Muslim	5.7	83.0	11.3
	Non-Muslim	8.0	79.6	12.4
(I6) No competition in the market	Muslim	10.7	77.6	11.7
	Non-Muslim	19.1	69.3	11.5

Source: Scholar's Calculation based on Primary Survey (2nd week of October, 2023 – 1st week of March, 2024)

Note: Fully Motivated refers to the percentage of respondents who responded in rank 5 (Very High) and rank 4 (High) combined, while Not Fully Motivated refers to the percentage of respondents who responded in rank 3 (Moderately) and rank 2 (Low) combined. Rank 1 reported the percentage of respondents who did not feel motivated by the item under motivational factors.

Some items are labeled differently from Table 1 for ease of interpretation, while retaining the same meaning.

- Result of Principal Component Analysis:

19 out of 26 items were detected with and compressed under five factors – **(i)Factor 1 (Self Development)** taking P4, P3, E2, P5, E1 and P7; **(ii)Factor 2 (Socialization)** taking S2, S1, S3, P2 and I3; **(iii) Factor 3 (Access to Market)** taking I5, I6, I4; **(iv)Factor 4 (Self-Esteem)** taking P9, P10, P8 and **(v)Factor 5 (Financial Reason)** taking E3 and E4 with 63.456 of the variance. Each factor's eigenvalue is greater than 1, as shown by the ordering of factors by importance, starting with Factor 1: Self Development, with an eigenvalue of 6.063, followed by 2.283, 1.797, 1.329, and 1.220 for Factors 2 to 5. The high Kaiser- Meyer-Olkin (KMO) value and chi-square value in Bartlett's test of sphericity (0.867 and 7547.698 p value<0.001, respectively) revealed the sample adequacy for factor analysis.

Table 3 presents the results of the PCA of the motivation items.

Table– 3
Summary of Results of PCA of the items of Motivation behind joining SHGs

Factors	Mean	SD	F.L.	Com.	E.V.	KMO	X2 of Bertlet Test	V.E.	Alpha Value
Factor1-Self Development									
P4	3.29	.962	.827	.720	6.063	0.867	7547.698	18.429	.858
P3	3.37	.934	.796	.661					.860
E2	3.20	.920	.760	.689					.862
P5	3.22	.897	.616	.645					.860
E1	3.24	.963	.607	.524					.861
P7	3.41	1.061	.594	.660					.859
Factor2– Socialization									
S2	3.65	.949	.767	.737	2.283			12.565	.859
S1	3.18	1.058	.705	.625					.861
S3	3.37	1.054	.695	.612					.860

P2	3.89	.922	.523	.681																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Source: Author’s Calculation on the data of Primary Survey (2nd week of October, 2023 – 1st week of March, 2024)

Note: SD: Standard Deviation, F.L.=Factor Loading, Com=Communalities Extracted, KMO= Kaiser-Meyer-Olkin (KMO), E.V. = Eigen Value, V.E. = Variance Explained.

Once the factors were identified, the study tested the hypotheses using binary logistic regression.

- Logistic Regression:

$$\text{SHGMNM} = \beta_0 + \beta_1 \text{F1} + \beta_2 \text{F2} + \beta_3 \text{F3} + \beta_4 \text{F4} + \beta_5 \text{F5} + \beta_6 \text{EDUQ} + \beta_7 \text{AGE} + \beta_8 \text{ECOST} + \text{U1}$$

SHGMNM denotes Muslim and non-Muslim participants of SHGs, and it is the dependent variable: SHGMNM=1 if the individual is Muslim and SHGMNM=0 if the individual is non-Muslim.

F1 = Factor 1 (Self Development),

F2 =Factor 2 (Socialization),

F3= Factor 3 (Access to Market),

F4=Factor4(Self-Esteem),

F5 =Factor5 (Financial Reason).

EDUQ=1, if the individual is ‘Illiterate’, 2, if the individual has ‘Primary to Class VII’ Education and 3, if the individual has ‘Class VIII and Others’.

AGE = 1, if the individual is from the ‘18-27’ age group, 2, if the individual is from the ‘27-38’ age group, and 3, if the individual is from the ‘38 and above’ age group.

ECOST=1 if the individual is from ‘APL’, 2 if the individual is from the ‘BPL’ category. U1 stands for the model disturbance term.

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The Model could be a good fit or a significant improvement in fit as compared to the null model, which was reflected in the Omnibus Test of Model Coefficient ($\chi^2=141.430$, Sig=0.000) and supported by the Hosmer and Lemeshow Test ($\chi^2= 5.504$, Sig = 0.703) with an indication of no difference between observed and predicted model.

Table 4 reflects the result of the Logit Model.

Table –4
Result of the Binary Logistic Regression Model and Variables in the Equation

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
F1	.276	.150	3.368	1	.066	1.317	.981	1.768
F2	-.853	.160	28.263	1	.000	.426	.311	.584
F3	.304	.142	4.604	1	.032	1.356	1.027	1.790
F4	.256	.148	2.969	1	.085	1.291	.965	1.727
F5	.098	.114	.730	1	.393	1.102	.881	1.379
Age			9.173	2	.010			
Age(1)	-.859	.292	8.682	1	.003	.424	.239	.750
Age(2)	-.847	.307	7.590	1	.006	.429	.235	.783
Education			14.538	2	.001			
Education(1)	.899	.336	7.152	1	.007	2.457	1.271	4.748
Education(2)	.671	.189	12.533	1	.000	1.956	1.349	2.835
Eco. Status(1)	-1.300	.244	28.455	1	.000	.273	.169	.440
Constant	1.277	.662	3.718	1	.054	3.586		

Source: Author's Calculation on the data of Primary Survey (2nd week of October, 2023 – 1st week of March, 2024)

The coefficients of **Factor 1 (Self- Development)**, **Factor 3 (Access to Market)** and **Factor4 (Self-Esteem)** of individuals from Muslim and non- Muslim Communities in respect of being motivated in participating in SHGs reflected the fact that if a woman belonged to Muslim community, she would likely to be a member of SHGs almost 0.276 times, 0.304 times and 0.256 times respectively more than that of the woman belonging to non-Muslim community. On the contrary, the coefficient of **Factor 2 (Socialization)** of individuals from **Muslim and non-Muslim communities** with respect to being motivated to participate in SHGs reflected the fact that if a **woman belonged to a non-Muslim community, the chance of being a member of SHGs would be almost 0.853 times that of a Muslim woman**. In this regard, the religious restriction might demotivate the Muslim women to meet and mix with other group members, for which they did not find such motivation from Factor2 as the non-Muslim members.

Factor 5, i.e., Financial Reason, did not show a significant effect in predicting the likelihood of a woman becoming a member of SHGs, when religion was taken into consideration.

Age (AGE): The Age of individuals can influence their vitality, productivity, and willingness to acquire new knowledge and skills, and their involvement in group efforts to achieve their goals with full enthusiasm. As shown in Table 3, the oldest women in the study (38 years and above) were more motivated than the other two groups (18-27 and 28-37), and they were mainly from the Muslim community.

Education (EDUQ): Education helps individuals secure decent jobs across all sectors. Therefore, an educated person can choose among different economic activities according to their preferences. Lack of education, hence, is another significant constraint that does not allow Muslim women to get a dignified job opportunity. SHGs, in this regard, can enable no- or low-educated Muslim women to continue their economic activities there. This can be reflected in the result of the present study, where the illiterate women were found motivated to attach with SHGs, higher than that of the educated women (Class VIII or others), with a higher proportion from the Muslim community.

Economic Status (ECOST): Economic Status (APL and BPL) refers to an individual's ability to meet regular consumption needs. Hence, a lack of financial strength forces an individual to attach to economic activities to maintain their livelihood. In the present study, members from the BPL class were found to get motivated to attach with SHGs, where the Muslim community was detected as holding a higher proportion than that of the non- Muslim community. Lack of finance might prevent the specific community from starting other economic activities that require substantial capital, while SHGs could help the concerned women save money and sometimes obtain an internal loan.

4.2 Discussion

The findings of the study in this regard echoed the findings of some previous studies authored by Nazeerudin (2012); Akehurst et al. (2012); Rajagopal (2020), where the impact of the demographic characteristics (age, education, religion, gender, etc.) on the choice of an individual to become a part of an economic activity was highly endorsed. Apart from other demographic characteristics, gender class would have a significant impact on an individual's behaviour in selecting an economic activity to promote their livelihood. Though previously i.e. before 1980s, similar motivational issues i.e. the need for success, independence, economic reward and job satisfaction were detected both for men and women for getting involved in an economic activity (Schwartz, 1976), it could be reflected in other studies (Kazi, 1999; Jain, 2003; Biswas, 2007; Vishnuvarthini & Ayyothi, 2016) after 1980s that women could be motivated for some internal factors like desire for independence, self-realization, internal control, opportunity to develop skills etc. more than getting economic reward. The present study also reflected the same motivational factors for women in getting involved in SHGs, but additionally, it reflected some special issues related to the previous studies (Chhaya, 2013; Bariya et al., 2016) for the religious aspect, i.e. for the participation of women from the minority (Muslim) community. Although Muslim women were not found to be as motivated to join SHGs as their non-Muslim counterparts in a previous study by Ahmad et al. (2020), in the current study, they were motivated to join SHGs, sometimes more than their non-Muslim counterparts. Joining SHGs, the Muslim respondents preferred to get **self-development** opportunities that they might not adopt otherwise due to their restricted lives. Additionally, achieving financial strength through SHGs could give them a sense of pride, which may attract them to get involved in SHGs. Likewise, as Muslim women might face trouble to purchase/sell of products openly in the market to continue their own economic activities due to religious restrictions, the factor of access to the market gave them motivation to join SHGs. Additionally, the current study, in line with other studies (Chhaya, 2013; Devi, 2014), found that Muslim women might want to join SHGs to gain recognition in society and within their families, which they might not otherwise have. The other group of women also felt motivated by the factors, but not as much as the Muslim women, as the former could continue their economic activities with more freedom and support from their surroundings. Though, in some previous studies (Kalleberg & Leicht, 1991; Lerner & Almor, 2002), age was not detected to have direct relationship with individual's engagement in any economic activity, the present study echoing with others

(Akehursta et al., 2012; Ohlan, 2020), argued that the aged Muslim women were more likely to participate in SHGs than that of the other groups. Here, older women might want to support their families financially, engage in economic activities that require less physical strength, or seek a job that offers a balance between family and work. Additionally, the less educated Muslim women were more attracted to enter SHGs than the other group of women, which, though accepted by Lerner and Almor (2002), was strongly disagreed with by Hossain (2013).

Several research findings (DeMartino & Barbato, 2003; Hinz, 2004) indicated that Muslim women did not receive family support and co-operation for the irregular activities they could engage in after attaching to any economic activity. This was also echoed in the present study, as family support and co-operation were identified as motivating factors behind joining SGHs. Although many studies (Nazeerudin, 2012; Poonam & Shukla, 2013) found that Muslim women aspired to Socialization after engaging in economic activities outside the home, the present study found that Socialization did not motivate Muslim women to participate in SHGs to the same extent as in non-Muslim communities.

5. Conclusion and Policy implication

The present study highlighted the motivational factors behind women's participation in SHGs, where the Muslim community was the main target group. Considering the objective of the study and the participants' responses, after the reliability test, PCA was used, and five main factors were identified: Self-Development, Socialization, Access to Market, Self-Esteem, and Financial Reason. Next, logistic regression was used to predict the membership status of Muslim women compared with non-Muslim women, using the motivational factors (Self-Development, Socialization, Access to Market, Self-Esteem and Financial Reason) and the demographic characteristics of the respondents (Age, Education and Economic Status) as independent variables. The study, hence, infers differences in responses from Muslim and non-Muslim communities regarding joining SHGs, though, for economic reasons, no difference in responses was found between Muslim and non-Muslim communities.

The study, therefore, recommended considering the requirements of minorities, in order of priority, to involve them in any economic activity. The demographic characteristics identified as influencing the behaviour of the women in question should be considered when determining the requirements of different groups. Attention should also be given to the specific region/state to detect the position of the minority community there. This would also identify the respondents' requirements at the location.

The study focused on the factors motivating socially backward Muslim women to join SHGs, where non-Muslim women were also considered to detect the comparative assessment. Moreover, the study considered its field of operation in Murshidabad, a Muslim-dominated district of West Bengal, where the social activism of Muslim women could be tested against women belonging to socially upward religions. Hence, the study could establish its significance in policy framing based on the micro empirical assessment, which might be more acceptable in policy-making circles than any standardized theoretical framework. It thus established its significance in society by analyzing the driving forces behind Muslim participation in SHGs, which ultimately made them involved in the mainstream activities. This proved its significance in the context of the socio-cultural-economic background of our society, as the major portion of the minority religion, Muslim women, with their problems and prospects, were studied. Additionally, the behavioural activities of Muslim women, compared with those of non-Muslim women, based on certain demographic characteristics, would help policymakers emphasize specific demographics and the motivating factors for involvement in grassroots operations. In this context, the study highlights findings that differ from those of previous studies. This would add special value to it for future consideration.

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Note:

ⁱThis information has been retrieved from <https://www.minorityaffairs.gov.in/reports/sachar-committee-report>

ⁱⁱThis information has been retrieved from the link <https://worldpopulationreview.com/country-rankings/muslim-population-by-country>

ⁱⁱⁱThis information has been retrieved from <https://www.census2011.co.in/>

^{iv}This information has been retrieved from <https://www2.ohchr.org/english/ohchrreport2019/>

^vThis information has been retrieved from the link <https://www.iasgyan.in/daily-current-affairs/shgs-in-india>

^{vi}This information has been retrieved from https://www.unido.org/sites/default/files/2009-04/A_path_out_of_poverty_0.pdf

^{vii}This information has been retrieved from <https://rural.nic.in/en/press-release/day-nrlm-mord-organized-%E2%80%99Cudyamita-pakhwara%E2%80%99D-1st-15th-july-2022>

^{viii}This information has been retrieved from <https://murshidabad.gov.in/subdivision-blocks/>

^{ix}This information has been retrieved from <https://censusindia.gov.in/census.website/>

^x Except in Age, Education and Economic Status, in other socio-demographic variables no variation in frequencies was found for Muslim and non-Muslim members. So, in the present study, these three variables were used.

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