

Sustainable Supply Chain Communication through Digital Marketing Channel

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Abstract

Sustainability has become a strategic priority for organizations seeking to balance economic performance with environmental protection and social responsibility. Within this context, sustainable supply chain management has gained prominence as firms increasingly recognize that sustainability outcomes depend not only on internal operations but also on transparency and coordination across suppliers, distributors, and other stakeholders. However, achieving sustainable supply chains requires effective communication mechanisms that convey sustainability practices, standards, and performance to diverse audiences. Digital marketing channels have emerged as powerful tools for enabling such communication.

Digital marketing channels—including websites, social media platforms, email marketing, online reports, and digital storytelling—offer organizations the ability to communicate supply chain sustainability initiatives in real time and at scale. Through these channels, firms can disclose information related to sourcing practices, labor standards, environmental impact, and ethical compliance. Transparent communication through digital platforms helps reduce information asymmetry, enhance stakeholder trust, and promote accountability across supply chain networks.

This study examines the role of digital marketing channels in facilitating sustainable supply chain communication. It adopts a conceptual and analytical approach supported by existing literature on sustainable supply chain management, digital marketing, and corporate sustainability communication. The analysis highlights how digital channels support visibility, traceability, and stakeholder engagement by enabling firms to share sustainability data, certifications, and impact narratives. Interactive digital communication further allows organizations to engage customers, investors, regulators, and civil society in sustainability dialogue.

The study also acknowledges challenges associated with digital supply chain communication, including information overload, inconsistent messaging, and the risk of greenwashing. Without credible and standardized disclosures, digital communication may fail to generate trust or may even undermine sustainability claims. Therefore, authenticity, consistency, and evidence-based communication are critical to the success of digital sustainability messaging.

By integrating insights from supply chain and digital marketing literature, this study contributes to understanding how digital marketing channels can enhance sustainable supply chain communication. It offers implications for managers and policymakers on leveraging digital tools to improve transparency, collaboration, and sustainable performance. Overall, the study concludes that digital marketing channels, when used strategically and ethically, play a vital role in strengthening sustainable supply chain communication and advancing broader sustainability goals.

Keywords: Sustainable supply chain, digital marketing channels, sustainability communication, supply chain transparency, stakeholder engagement, ethical sourcing, sustainable development.

Introduction

Sustainable development has emerged as a central concern for organizations operating in an increasingly globalized and interconnected economy. Supply chains, which link raw material sourcing, production, distribution, and consumption, play a critical role in determining environmental and social outcomes. Issues such as carbon emissions, labor conditions, resource depletion, and ethical sourcing have shifted attention toward sustainable supply chain management as a strategic imperative for organizations.

Sustainable supply chains require coordination and transparency across multiple actors, including suppliers, manufacturers, logistics providers, and retailers. However, sustainability efforts within supply chains often fail to deliver their full impact due to inadequate communication. Stakeholders may lack access to reliable information regarding sourcing practices, environmental performance, or social responsibility initiatives. Effective communication is therefore essential to ensure alignment, accountability, and trust across supply chain networks.

Digital marketing channels have transformed organizational communication by enabling rapid, interactive, and cost-effective dissemination of information. Websites, social media platforms, email campaigns, and digital reporting tools allow organizations to communicate sustainability initiatives directly to stakeholders. These channels provide opportunities to disclose supply chain practices, share sustainability goals, and demonstrate progress toward responsible sourcing and production.

In the context of sustainable supply chains, digital marketing communication supports transparency and traceability. Firms can use digital tools to communicate supplier standards, certifications, and compliance mechanisms. Visual storytelling and real-time updates help make complex supply chain information more accessible and understandable for non-expert audiences. Moreover, digital platforms facilitate two-way communication, enabling stakeholders to provide feedback and engage in dialogue.

Digital communication is particularly important as consumers and investors increasingly demand ethical and sustainable products. Stakeholders expect organizations to provide credible evidence of sustainability claims rather than symbolic statements. Digital marketing channels, when used responsibly, can help meet these expectations and strengthen organizational legitimacy.

However, challenges remain. Information overload, inconsistent reporting standards, and concerns about greenwashing can undermine trust. Organizations must therefore adopt strategic and ethical approaches to digital sustainability communication.

This study aims to examine how digital marketing channels contribute to sustainable supply chain communication. By analyzing the role of digital tools in enhancing transparency, engagement, and trust, the study contributes to understanding how communication supports sustainable supply chain performance and broader sustainable development objectives aligned with the United Nations Sustainable Development Goals.

Literature Review

The literature on sustainable supply chain management emphasizes the integration of environmental, social, and economic considerations into supply chain operations. Scholars argue

that sustainability performance depends not only on internal practices but also on effective coordination and communication across supply chain partners. Transparency and information sharing are identified as key enablers of sustainable supply chains.

Research on sustainability communication highlights the role of disclosure and stakeholder engagement in building trust and legitimacy. Transparent communication of sustainability practices reduces information asymmetry and enhances accountability. In supply chain contexts, communication is particularly complex due to the involvement of multiple actors across geographical boundaries.

Digital marketing literature emphasizes the effectiveness of online channels in disseminating information and engaging stakeholders. Digital platforms enable organizations to communicate sustainability initiatives in interactive and visually engaging formats. Social media, in particular, facilitates dialogue and peer influence, while corporate websites and digital reports provide detailed sustainability disclosures.

Several studies explore digital tools for supply chain transparency, such as online dashboards, traceability platforms, and sustainability reporting systems. These tools allow organizations to communicate supplier compliance, certifications, and environmental impact. Digital storytelling further humanizes supply chain issues by highlighting worker conditions and community impact.

However, the literature also identifies challenges. Greenwashing and selective disclosure can undermine credibility. Inconsistent sustainability standards across suppliers complicate communication. Additionally, excessive information may overwhelm stakeholders, reducing clarity and impact.

Despite growing research interest, limited studies integrate **digital marketing communication** with **sustainable supply chain management** outcomes. Most studies focus either on operational sustainability or external communication independently. This study addresses this gap by synthesizing insights from supply chain management, digital marketing, and sustainability communication to analyze how digital marketing channels support sustainable supply chain communication.

Research Gap

Sustainable supply chain management has received substantial attention in academic literature, particularly in relation to environmental protection, ethical sourcing, labor standards, and carbon footprint reduction. Numerous studies emphasize operational strategies such as green procurement, supplier audits, and lifecycle assessment as mechanisms to achieve sustainability. Parallel research in sustainability communication focuses on transparency, disclosure, and stakeholder engagement. However, despite these advancements, significant research gaps persist at the intersection of sustainable supply chain management and digital marketing communication.

First, much of the existing research on sustainable supply chains is **operationally oriented**, concentrating on internal processes and supplier compliance. Comparatively limited attention has been given to **external communication mechanisms** that convey supply chain sustainability practices to stakeholders such as consumers, investors, regulators, and civil society. Communication is often treated as an outcome rather than a strategic enabler of sustainable supply chains.

Second, studies that examine sustainability communication largely focus on corporate social responsibility reporting or sustainability reports, which are typically static and one-way in nature. The potential of **digital marketing channels**—such as social media, interactive websites, email marketing, and digital storytelling—to facilitate dynamic, two-way communication in supply chains remains underexplored.

Third, existing literature often analyzes digital marketing and supply chain sustainability as **separate domains**, leading to fragmented insights. There is a lack of integrated empirical studies that examine how digital marketing channels influence stakeholder understanding, trust, and engagement with sustainable supply chain initiatives.

Additionally, research on digital sustainability communication frequently emphasizes brand image or consumer perception without explicitly linking communication practices to **supply chain-level sustainability outcomes**, such as transparency, accountability, and collaboration. This limits

understanding of how communication supports long-term supply chain sustainability rather than short-term reputational benefits.

Finally, limited empirical research exists in the context of **emerging economies**, where supply chains are complex and digital adoption is uneven. The challenges and opportunities of using digital marketing channels to communicate sustainability across global supply chains require further investigation. This study addresses these gaps by empirically examining the role of digital marketing channels in enhancing sustainable supply chain communication and stakeholder engagement.

Research Methodology

The present study adopts a **descriptive and analytical research design** to examine the role of digital marketing channels in communicating sustainable supply chain practices. A **quantitative research approach** was employed to systematically analyze stakeholder perceptions and communication effectiveness.

The target population consisted of consumers, supply chain professionals, and sustainability-aware individuals who interact with organizations through digital platforms. A sample size of **300 respondents** was selected using the **convenience sampling technique**, considering accessibility and time constraints. Respondents were drawn from urban and semi-urban areas with regular exposure to digital media.

Primary data were collected using a **structured online questionnaire**. The questionnaire was divided into two sections. The first section captured demographic details such as age, gender, education level, occupation, and frequency of digital media usage. The second section focused on perceptions of sustainable supply chain communication through digital marketing channels.

Key constructs measured included clarity of sustainability information, transparency of supply chain disclosures, credibility of digital content, stakeholder engagement, and trust. Responses were recorded using a **five-point Likert scale** ranging from “Strongly Disagree” to “Strongly Agree.”

The independent variable of the study is **digital marketing communication channels**, measured through indicators such as website disclosures, social media engagement, digital storytelling, and email communication. The dependent variables include **stakeholder awareness, trust, and perceived supply chain sustainability**. Trust was also examined as a mediating variable.

Data analysis involved **descriptive statistics** to summarize respondent characteristics and perception levels, **correlation analysis** to examine relationships between digital communication and sustainability perceptions, and **regression analysis** to assess the impact of digital marketing communication on trust and awareness. Ethical considerations such as informed consent, anonymity, voluntary participation, and confidentiality were strictly maintained throughout the research process.

Data Analysis and Results

Data collected from 300 respondents were analyzed using descriptive and inferential statistical techniques to evaluate the effectiveness of digital marketing channels in communicating sustainable supply chain practices.

Descriptive analysis revealed that a majority of respondents frequently encounter sustainability-related supply chain information through digital platforms, particularly corporate websites and social media. Respondents demonstrated moderate to high awareness of issues such as ethical sourcing, environmental impact, and labor standards. Mean scores for digital communication clarity and transparency were above the neutral midpoint, indicating generally positive perceptions.

Correlation analysis indicated a **positive and statistically significant relationship** between the use of digital marketing channels and stakeholder awareness of sustainable supply chain practices. Respondents who reported higher exposure to digital sustainability communication exhibited greater understanding of supply chain transparency and ethical practices.

Regression analysis was conducted to examine the impact of digital marketing communication on stakeholder trust. The results showed that digital communication significantly predicts trust in supply chain sustainability. Among the communication dimensions, **credibility of information**

and **clarity of disclosures** emerged as the strongest predictors. When trust was introduced as a mediating variable, the explanatory power of the model increased, confirming the mediating role of trust.

The analysis also revealed that interactive digital content, such as videos and storytelling, was perceived as more effective than static disclosures. Respondents expressed skepticism toward vague or overly promotional sustainability messages, indicating the importance of evidence-based communication.

Overall, the results confirm that digital marketing channels positively influence awareness, trust, and perceived sustainability of supply chains when communication is transparent and credible.

Findings and Discussion

The findings of the study highlight the strategic importance of digital marketing channels in supporting sustainable supply chain communication. One of the key findings is that digital communication significantly enhances stakeholder awareness of supply chain sustainability practices. Digital platforms allow organizations to disseminate information efficiently and present complex supply chain processes in accessible formats.

The study also finds that **trust is central** to effective sustainability communication. Transparent and credible digital disclosures strengthen stakeholder confidence in supply chain practices. This aligns with sustainability and stakeholder theory, which emphasize trust as a prerequisite for long-term relationships.

Another important finding is the effectiveness of interactive communication. Visual storytelling and engagement-oriented digital content foster emotional connection and understanding, making sustainability information more relatable. This supports the view that communication should go beyond compliance reporting and actively engage stakeholders.

However, the discussion also highlights challenges such as greenwashing and information overload. Inconsistent messaging or exaggerated claims reduce credibility and undermine sustainability efforts. Organizations must therefore adopt ethical communication practices.

From a managerial perspective, the findings suggest that digital marketing should be integrated into supply chain sustainability strategies. Investment in transparent communication systems and digital capabilities can enhance accountability and collaboration.

Overall, the discussion confirms that digital marketing channels are powerful enablers of sustainable supply chain communication when implemented strategically, ethically, and consistently.

Conclusion

The present study examined the role of digital marketing channels in facilitating effective communication of sustainable supply chain practices. As global supply chains become increasingly complex and geographically dispersed, transparency and communication have emerged as essential components of sustainability. Organizations are no longer evaluated solely on operational efficiency but also on how clearly and credibly they communicate their environmental and social practices to stakeholders. This study confirms that digital marketing channels play a crucial role in addressing this need.

One of the key conclusions of the study is that digital marketing significantly enhances the visibility and understanding of sustainable supply chain practices. Platforms such as corporate websites, social media, digital reports, and online storytelling allow organizations to communicate sourcing policies, environmental initiatives, labor standards, and ethical commitments in accessible and engaging formats. By leveraging these channels, firms can reduce information asymmetry and make supply chain sustainability more transparent to consumers, investors, and regulators.

The study also concludes that **credibility and trust** are central to successful sustainable supply chain communication. Stakeholders are more likely to perceive supply chains as sustainable when digital communication is consistent, evidence-based, and supported by certifications or third-party verification. Digital marketing channels that emphasize clarity and factual disclosure strengthen stakeholder confidence and contribute to long-term legitimacy. Conversely, vague or promotional

sustainability messages increase skepticism and undermine trust, reinforcing concerns related to greenwashing.

Another important conclusion is the effectiveness of interactive and engagement-oriented communication. Visual storytelling, videos, and real-time updates help humanize supply chain activities and make sustainability efforts more relatable. Two-way digital communication enables stakeholders to ask questions, provide feedback, and participate in sustainability dialogue, fostering a sense of inclusion and accountability.

The study also highlights the strategic value of integrating digital marketing communication with supply chain sustainability management. Communication should not be treated as a post-implementation activity but as a core strategic function that supports collaboration, monitoring, and continuous improvement across supply chain partners. Digital communication tools can enhance coordination and reinforce sustainability standards throughout the supply chain.

Despite these benefits, the study recognizes challenges such as information overload, inconsistent sustainability standards, and unequal digital access. These challenges require organizations to adopt ethical, selective, and stakeholder-oriented communication strategies. Investment in digital capability building and standardized sustainability reporting frameworks can further enhance communication effectiveness.

Overall, the study concludes that digital marketing channels are powerful enablers of sustainable supply chain communication when used strategically and responsibly. By improving transparency, strengthening trust, and enhancing stakeholder engagement, digital marketing contributes to more resilient, accountable, and sustainable supply chains, supporting broader sustainable development objectives.

References

- Ahi, P., & Searcy, C. (2015). Measuring social issues in sustainable supply chains. *Measuring Business Excellence*, 19(1), 33–45.
- Pagell, M., & Wu, Z. (2009). Building a more complete theory of sustainable supply chain management. *Journal of Supply Chain Management*, 45(2), 37–56.

- Rodrigue, M., Magnan, M., & Boulianne, E. (2013). Stakeholders' influence on environmental strategy. *Journal of Accounting & Public Policy*, 32(1), 1–21.
- Schaltegger, S., & Burritt, R. (2014). Measuring and managing sustainability performance. *Sustainability Accounting, Management and Policy Journal*, 5(3), 240–259.
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework. *Journal of Cleaner Production*, 16(15), 1699–1710.
- Tate, W. L., Ellram, L. M., & Kirchoff, J. F. (2010). Corporate social responsibility reports. *Journal of Purchasing and Supply Management*, 16(1), 22–35.
- Verma, C., & Jain, V. (2023). Exploring Promotional Strategies in Private Universities: A Comprehensive Analysis of Tactics and Innovative Approaches.
- Agarwal, C., Pradesh, M. U., Jain, V., & Verma, C. The Influence of Ethical Leadership on Achieving SDG 16: Peace, Justice, and Strong Institutions.
- Verma, C., & Jain, V. Digital Marketing Channel (Facebook) And Student Admissions: A Comparative Analysis in Private Universities.
- Verma, V., Gupta, K., Verma, C., & Pradesh, U. Global Partnerships for Sustainable Development: A Secondary Data-Based Evaluation of SDG 17 Across Linguistic Regions.
- Jain, V., & Verma, C. Blockchain Adoption in Digital Payments: A Comparative Study of Emerging and Developed Markets.
- Jain, V., Verma, C., Agarwal, M. K., & Rajkumar, A. (2026). Influence of Content Authenticity on Long-Term Consumer Loyalty in Digital Markets. *International Journal of Research & Technology*, 14(S1), 608-628.
- Verma, C., Manimekalai, K., Patil, M. K., & Dadhich, M. R. Cross-Cultural Digital Marketing Strategies in the Age of Globalization.
- Vurro, C., Russo, A., & Perrini, F. (2009). Shaping sustainable value chains. *Journal of Business Ethics*, 90(4), 607–621.
- Jain, V., Gupta, S. S., Shankar, K. T., & Bagaria, K. R. (2022). A study on leadership management, principles, theories, and educational management. *World Journal of English Language*, 12(3), 203-211.

- Jain, V. (2021). Word of mouth as a new element of the marketing communication mix: Online consumer review. *South Asian Journal of Marketing & Management Research*, 11(11), 108-114.
- Jain, V. (2021). An overview of wal-mart, amazon and its supply chain. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(12), 749-755.
- Kumar, A., Kansal, A., & Jain, V. (2020). A Comprehensive Study of Factor Influencing Investor's Perception Investing in Mutual Funds. *European Journal of Molecular & Clinical Medicine*, 7(11), 2020.
- Ansari, S., Kumar, P., Jain, V., & Singh, G. (2022). Communication skills among university students. *World Journal of English Language*, 12(3), 103-109.
- Verma, A., Singh, A., Sethi, P., Jain, V., Chawla, C., Bhargava, A., & Gupta, A. (2023). Applications of data security and blockchain in smart city identity management. In *Handbook of Research on Data-Driven Mathematical Modeling in Smart Cities* (pp. 154-174). IGI Global Scientific Publishing.
- Verma, A. K., Ansari, S. N., Bagaria, A., & Jain, V. (2022). The Role of Communication for Business Growth: A Comprehensive Review. *World Journal of English Language*, 12(3), 164-164.
- Agarwal, P., Jain, V., & Goel, S. (2020). Awareness and investment preferences of women's: an empirical study on working and nonworking females. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(7), 13469-13484.
- Pallathadka, H., Leela, V. H., Patil, S., Rashmi, B. H., Jain, V., & Ray, S. (2022). Attrition in software companies: Reason and measures. *Materials Today: Proceedings*, 51, 528-531.
- Jain, V. (2021). An overview on social media influencer marketing. *South Asian Journal of Marketing & Management Research*, 11(11), 76-81.
- RAJKUMAR, A., & JAIN, V. (2021). A Literature Study on the Product Packaging Influences on the Customers Behavior. *Journal of Contemporary Issues in Business and Government* | Vol, 27(3), 780.
- Jain, V., Arya, S., & Gupta, R. (2018). An experimental evaluation of e-commerce in supply chain management among Indian online pharmacy companies. *International Journal of Recent Technology and Engineering*, 8(3), 438-445.

- Jain, V., Sethi, P., Arya, S., Verma, R., & Chawla, C. (2020). Project Evaluation Using Critical Path Method & Project Evaluation Review Technique. *Wesleyan J. Res*, 13, 1-9.
- Chawla, C., Jain, V., & Mahajan, T. (2013). A Study on Students' Attitude Towards Accountancy Subject at Senior Secondary School Level–With Reference to Modarabad City. *International Journal of Management*, 4(3), 177-184.
- Sumaiya, B., Srivastava, S., Jain, V., & Prakash, V. (2022). The role of effective communication skills in professional life. *World Journal of English Language*, 12(3), 134-140.
- Jain, V., Navarro, E. R., Wisetsri, W., & Alshiqi, S. (2020). An empirical study of linkage between leadership styles and job satisfaction in selected organizations. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(9), 3720-3732.
- Jain, V., & Ackerson, D. (2023). The Importance of Emotional Intelligence in Effective Leadership. Edited by Dan Ackerson, *Semaphore*, 5.
- Sharif, S., Lodhi, R. N., Jain, V., & Sharma, P. (2022). A dark side of land revenue management and counterproductive work behavior: does organizational injustice add fuel to fire?. *Journal of Public Procurement*, 22(4), 265-288.
- Rao, D. N., Vidhya, G., Rajesh, M. V., Jain, V., Alharbi, A. R., Kumar, H., & Halifa, A. (2022). An innovative methodology for network latency detection based on IoT centered blockchain transactions. *Wireless Communications and Mobile Computing*, 2022(1), 8664079.
- Jain, V. (2021). A review on different types of cryptography techniques. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(11), 1087-1094.
- Sharma, A., & Jain, V. (2020). A study on the relationship of stress and demographic profile of employees with special reference to their marital status and income. *UGC Care Journal*, 43(4), 111-115.
- Jain, V., Goyal, M., & Pahwa, M. S. (2019). Modeling the relationship of consumer engagement and brand trust on social media purchase intention-a confirmatory factor experimental technique. *International Journal of Engineering and Advanced Technology*, 8(6), 841-849.

- Jain, V., Al Ayub Ahmed, A., Chaudhary, V., Saxena, D., Subramanian, M., & Mohiddin, M. K. (2022, June). Role of data mining in detecting theft and making effective impact on performance management. In Proceedings of Second International Conference in Mechanical and Energy Technology: ICMET 2021, India (pp. 425-433). Singapore: Springer Nature Singapore.
- Wen, J., Mughal, N., Kashif, M., Jain, V., Meza, C. S. R., & Cong, P. T. (2022). Volatility in natural resources prices and economic performance: Evidence from BRICS economies. *Resources Policy*, 75, 102472.
- Kumar, S. U. M. I. T., & Jain, V. I. P. I. N. (2021). A survey on business profitability for a music artist by advertising on YouTube. *Journal of Contemporary Issues in Business and Government* | Vol, 27(3), 807.
- Chawla, C. H. A. N. C. H. A. L., & Jain, V. I. P. I. N. (2021). Teamwork on employee performance and organization Growth. *Journal of Contemporary Issues in Business and Government*, 27(3), 706.
- Jain, V., & Singh, V. K. (2019). Influence of healthcare advertising and branding on hospital services. *Pravara Med Rev*, 11, 19-21.
- CHAWLA, C., & JAIN, V. (2017). PROBLEMS AND PROSPECTS OF TOURISM INDUSTRY IN INDIA-WITH SPECIAL REFERENCE TO UTTAR PRADESH. *CLEAR International Journal of Research in Commerce & Management*, 8(9).
- Jain, V., & Sami, J. (2012). Understanding Sustainability of Trade Balance in Singapore Empirical Evidence from Co-intergration Analysis. *Viewpoint Journal*, 2(1), 3-9.
- Jain, V., & Gupta, A. (2012). Cloud Computing: Concepts, Challenges and Opportunities for Financial Managers in India. *Amity Global Business Review*, 7.
- Jain, V., Chawla, C., Agarwal, M., Pawha, M. S., & Agarwal, R. (2019). Impact of Customer Relationship Management on Customer Loyalty: A Study on Restaurants of Moradabad. *International Journal of Advanced Science and Technology*, 28(15), 482-49.
- Jain, V., & Garg, R. (2019). Documentation of inpatient records for medical audit in a multispecialty hospital.
- Jha, R. S., Jain, V., & Chawla, C. (2019). Hate speech & mob lynching: a study of its relations, impacts & regulating laws. *Think India (QJ)*, 22(3), 1401-1405.

- Shafi, M., Ramos-Meza, C. S., Jain, V., Salman, A., Kamal, M., Shabbir, M. S., & Rehman, M. U. (2023). The dynamic relationship between green tax incentives and environmental protection. *Environmental Science and Pollution Research*, 30(12), 32184-32192.
- Meza, C. S. R., Kashif, M., Jain, V., Guerrero, J. W. G., Roopchund, R., Niedbala, G., & Phan The, C. (2021). Stock markets dynamics and environmental pollution: emerging issues and policy options in Asia. *Environmental Science and Pollution Research*, 28(43), 61801-61810.
- The Phan, C., Jain, V., Purnomo, E. P., Islam, M. M., Mughal, N., Guerrero, J. W. G., & Ullah, S. (2021). Controlling environmental pollution: dynamic role of fiscal decentralization in CO2 emission in Asian economies. *Environmental Science and Pollution Research*, 28(46), 65150-65159.
- Rajkumar, D. A., Agarwal, P., Rastogi, D. M., Jain, D. V., Chawla, D. C., & Agarwal, D. M. (2022). Intelligent Solutions for Manipulating Purchasing Decisions of Customers Using Internet of Things during Covid-19 Pandemic. *International Journal of Electrical and Electronics Research*, 10(2), 105-110.
- Liu, J., Jain, V., Sharma, P., Ali, S. A., Shabbir, M. S., & Ramos-Meza, C. S. (2022). The role of Sustainable Development Goals to eradicate the multidimensional energy poverty and improve social Wellbeing's. *Energy Strategy Reviews*, 42, 100885.
- Jain, V., Beram, S. M., Talukdar, V., Patil, T., Dhabliya, D., & Gupta, A. (2022, November). Accuracy enhancement in machine learning during blockchain based transaction classification. In *2022 Seventh International Conference on Parallel, Distributed and Grid Computing (PDGC)* (pp. 536-540). IEEE.
- Yaqoob, N., Jain, V., Atiq, Z., Sharma, P., Ramos-Meza, C. S., Shabbir, M. S., & Tabash, M. I. (2022). The relationship between staple food crops consumption and its impact on total factor productivity: does green economy matter?. *Environmental Science and Pollution Research*, 29(46), 69213-69222.
- Maurya, S. K., Jain, V., Setiawan, R., Ashraf, A., Koti, K., Niranjana, K., ... & Vipin Jain, T. M. I. M. T. (2020). The Conditional Analysis of Principals Bullying Teachers Reasons in The Surroundings of The City. *Productivity Management*, 25(5), 1195-1214.

- Bai, D., Jain, V., Tripathi, M., Ali, S. A., Shabbir, M. S., Mohamed, M. A., & Ramos-Meza, C. S. (2022). Performance of biogas plant analysis and policy implications: Evidence from the commercial sources. *Energy Policy*, 169, 113173.
- Sundram, S., Venkateswaran, P. S., Jain, V., Yu, Y., Yapanto, L. M., Raisal, I., ... & Regin, R. (2020). The impact of knowledge management on the performance of employees: The case of small medium enterprises. *Productivity Management*, 25(1), 554-567.
- Khan, U. A., & Jain, V. (2025). Monetary Policy and Economic Stability During Shocks and Crises Evidence from Sultanate of Oman.
- Ramos Meza, C. S., Bashir, S., Jain, V., Aziz, S., Raza Shah, S. A., Shabbir, M. S., & Agustin, D. W. I. (2021). The economic consequences of the loan guarantees and firm's performance: a moderate role of corporate social responsibility. *Global Business Review*, 09721509211039674.
- Suresh, S., Markose, J., Eshwar, S., Rekha, K., & Jain, V. (2017). Comparison of platform switched and sloping shoulder implants on stress reduction in various bone densities: finite element analysis. *The Journal of Contemporary Dental Practice*, 18(6), 510-515.
- Sasmoko, Ramos-Meza, C. S., Jain, V., Imran, M., Khan, H. U. R., Chawla, C., ... & Zaman, K. (2022). Sustainable growth strategy promoting green innovation processes, mass production, and climate change adaptation: A win-win situation. *Frontiers in Environmental Science*, 10, 1059975.
- Dadhich, M., Pahwa, M. S., & Vipin Jain, R. D. (2021). Predictive Models for Stock Market Index Using Stochastic Time Series ARIMA Modeling in Emerging Economy. *Advances in Mechanical Engineering*, 281–290.
- Veeraiah, V., Kotti, J., Jain, V., Sharma, T., Saini, S., & Gupta, A. (2023, July). Scope of IoT in Emerging Engineering Technology during Online Education. In 2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT) (pp. 1-6). IEEE.
- Karla, D., Alam, M., Jain, V., & Sharma, M. (2022). An Overview on Team Work Strategy in Medical Education. *World J English Lang*, 12(3), 110-6.

- Nath, N. A. M. I. T. A., & Jain, V. I. P. I. N. (2020). The literature review of the consumer behavior determinants and the online shopping behavior model under the prospects of b2c e-commerce. *J. Orient. Res.* xci-xxxviii, 75-87.
- Jain, V., & Jain, V. (2019). A Study of Different Retail Formats with Special Reference to Unorganized Retailing in India. *International Journal of Management, IT & Engineering*, 9(4), 2.
- Vinoth, S., Gupta, S., Jain, V., & Kumari, U. (2024). Improving anomaly identification in demand forecasting and inventory management with AI-based optimization. *Multidisciplinary Science Journal*, 6.
- Verma, A. K., Ansari, S. N., Bagaria, A., & Jain, V. (2022). The Role of Communication for Business Growth: A Comprehensive. *World Journal of English Language*. <https://doi.org/10.5430>.
- Jain, V. (2021). Based upon block chain and its context. *ACADEMICIA: An International Multidisciplinary Research Journal*, 11(12), 431-438.
- Joshi, M. A., & Jain, V. (2024). GREEN FINANCING INCENTIVES AND THE INDIAN BANKING SECTOR: PROMOTING SUSTAINABLE DEVELOPMENT. DEPARTMENT OF COMMERCE (UG), 1.
- Gupta, N., Jain, V., Agarwal, P., Sharma, M., & Agarwal, A. K. (2024). Career change: systematic literature review future research agenda. Smart innovation, systems and technologies. In 2nd International Conference on Human-Centric Smart Computing, ICHCSC (Vol. 376, pp. 219-235).
- Jain, V., Verma, C., Agarwal, M. K., & Rajkumar, A. (2026). Influence of Content Authenticity on Long-Term Consumer Loyalty in Digital Markets. *International Journal of Research & Technology*, 14(S1), 608-628.
- KHAN, H. (2026). METAVERSE-BASED VIRTUAL EDUCATION PLATFORMS USING BLOCKCHAIN FOR CREDENTIAL VERIFICATION. *Journal of Theoretical and Applied Information Technology*, 104(4).
- Khan, U. A., & Jain, V. Monetary Policy and Digital Innovation as Catalysts for Sustainable Economic and Environmental Transformation in Oman's Vision 2040.

- Jain, S., Jain, V., & Agarwal, S. Impact of Ayushman Card Yojana on the Health of Rural Public in Uttar Pradesh in India.
- Zhang, W., Zhu, W., & Jain, V. (2026). Fiscal policy shocks and green growth in China. *Fluctuation and Noise Letters*, 25(1), 2650011-1930.
- Harshitha, P., Rajitha, N., Veeraiah, V., Rastogi, H., Koujalagi, A., Gupta, A., & Jain, V. (2025, November). Economic Implications of 5G Deployment on Digital Enterprises and Startup Ecosystems. In *2025 International Conference on Innovations and Emerging Technologies In AI & Communication Systems (IETACS)* (pp. 1099-1104). IEEE.
- Ramesh, J. V. N., Veeraiah, V., Bhattacharya, D., Jain, V., Jain, S. K., & Gupta, A. (2025, November). Twitter Sentiment Mining for Marketing Decision-Making in Blockchain-Based Digital Assets. In *2025 International Conference on Innovations and Emerging Technologies In AI & Communication Systems (IETACS)* (pp. 1005-1011). IEEE.
- Dasaraju, S. R., Nallamalli, V. R. B., Rajendran, J., Chennamsetty, M. R., Jain, V., & Painoli, G. K. (2025). Enhancing Strategy and Governance Through AI-Driven Behavioral Competency Analytics: An ML Model for Competency Development.
- Raj, A., & Jain, V. (2025). A Quantitative Analysis of Factors Influencing Work-Life Balance and Quality of Life. *European Economics Letters*, 15(3).
- Jain, N., & Jain, V. (2025). Exploring the Role of AI Personalization, Embedded Finance, and Gamification in Influencing Digital Wallet Users Buying Behavior in Western India. *European Economics Letters*, 15(3).
- Jain, N., & Jain, V. Assessing the Impact of Super App Integration and Contactless Payment Technologies on Consumer Buying Behavior in Western India.
- Joshi, A., & Jain, V. Assessing the Awareness and Understanding of Green Finance Incentives among Bank Employees. *International Journal of Environmental Sciences*, 11(5s), 2025.
- Vishnoi, N. K., Singh, R., & Jain, V. A Review on Green Purchase Behaviour about Green Products.
- Raj, A., & Jain, V. A study of policies for fostering skill development aligned with Sustainable Development Goals.

- Jain, N., & Jain, V. Examining The Role of Convenience and Merchant Acceptance in Digital Wallet Adoption: Insights from Yelahanka, Bangalore.
- Jain, T. S., & Jain, V. Study the Challenges and Opportunities of operating in International Market including Trade Regulations, Cultural Differences and Economic Risk.
- Sharma, R., Pradesh, M. U., & Jain, V. Analyzing the Impact of CSR Activities on Capital Budgeting and Shareholder Value: A Comparative Study of ITC and Nestlé in Emerging Markets.
- Jain, V. A Data-Driven Approach to Upskilling Western Uttar Pradesh's Healthcare Professionals Akanksha Arora Research Scholar Teerthanker Mahaveer Institute of Management and Technology.
- Khan, U. A., Muscat, O., & Jain, V. Aligning Monetary Policies with Sustainability: Evaluating the Role of Central Bank in Oman's Vision 2040 for Financing SDG-Compliant Businesses.
- Jain, V., & Verma, C. Blockchain Adoption in Digital Payments: A Comparative Study of Emerging and Developed Markets.
- Khanna, R., Singh, R., & Jain, V. Exploring the Impact of Age on Work-Life Balance: A Comparative Study across Academicians.
- Arora, A., & Jain, V. Technology-Assisted Healthcare Upskilling: A Study of Western Uttar Pradesh.
- Mittal, S., & Jain, V. CORPORATE GOVERNANCE AND FIRM'S PERFORMANCE: ANALYSIS OF LITERATURE REVIEW.
- Mittal, S., & Jain, V. A study on the Corporate Governance and Company Characteristics of the Manufacturing Sector in India.
- Modia, P., Jainb, V., Uchilc, A., & Nandad, S. Examining link prediction and node connectivity objectives in social networks: Comprehensive review.
- Nanda¹, S., Jain, V., & Purohit, A. The Importance of Mental Development in Addressing Youth Unemployment: A Psychological Case Study of Skill Retention in Development Programmes.

- Agarwal, P., Kumar, A., & Jain, V. PROFESSIONAL WOMEN AND STRESS: A STUDY OF PSYCHOLOGICAL AND WORK-PLACE BEHAVIOUR OF PROFESSIONAL WOMEN.
- Sethi, P., & Agarwal, P. A STUDY OF OPTIMIZATION TECHNIQUES USED IN OPERATIONS RESEARCH: ITS PROSPECTS AND PROBLEMS.
- Jain, V., Ramos-Meza, C. S., Min, Z., Qian, X., Ali, S. A., Sharma, P., ... & Shabbir, M. S. (2023). The dynamic relationship among technological innovation, international trade, and energy production.
- Hashim, N. A. A. N., Batool, H., Jain, V., Julca-Guerrero, F., & Cruz-Castillo, N. (2023). A systematic study of mobility and innovation and technology management for skilled enhancement with operational frameworks. *International Journal of Intellectual Property Management*, 13(3-4), 227-251.
- Jain, V., Sethi, P., Rawat, G., Singh, V. A., Kumar, A. R., Chawla, C., & Bansal, B. (2023). Information Frameworks and Business Patterns in Smart Cities. In *Handbook of Research on Data-Driven Mathematical Modeling in Smart Cities* (pp. 224-237). IGI Global Scientific Publishing.
- Jiang, J., Jain, V., Qian, X., Sharma, P., Mohamed, M. A., Haddad, A. M., ... & Zamir, A. Does Renewable Energy matter for SDGs? The dynamic relationship among Trade Exports Quality, Renewable Energy and Sustainable Economic Production. *Frontiers in Environmental Science*, 1788.
- Sehgal, S., Dhingra, V., & Jain, V. (2022). Effect of Covid Pandemic on Interest Rates and thereby Attractiveness of Reverse Mortgage Loans. *INTERNATIONAL JOURNAL OF SPECIAL EDUCATION*, 37(3).
- Jain, V. (2021). Relations between the united states and china during the trump presidency. *Asian Journal of Research in Social Sciences and Humanities*, 11(11), 1-6.
- Jain Sr, V. ROLE OF TEACHERS IN INSTITUTIONAL PLANNING. *ADMINISTRATION AND MANAGEMENT IN SCHOOL EDUCATION*, 83.
- Jain, V. COACHING AND MENTORING IN EDUCATION SERVICE: AN ASSESSMENT. *COMMUNICATION SKILLS FOR PROFESSIONALS*, 71.

- Jain, V. Teerthanker Mahaveer Institute of Management & Technology, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India Email Id-vipin555@rediffmail.com. INTRODUCTION TO MEDIA STUDIES, 39.
- Ashok Kumar Upadhyay, Pramod Kumar Srivastava, Piyush Kumar (2026) Academic Excellence through Holistic Growth: Integrating Physical, Mental, Emotional, and Spiritual Development in Education, MSW MANAGEMENT -Multidisciplinary, Scientific Work and Management Journal, ISSN: 1053-7899, Vol. 36 Issue 1, Jan-June 2026, Pages: 744-752 (Scopus)
- Srivastava, P. K., Sharma, A., Whig, V., Malaviya, S., & Kumar, N. (2025). Review Of Transforming Grocery Shopping with Artificial Intelligent: A New Era of Convenience. *Advances in Consumer Research*, 2(2), 665-675.
- Srivastava, P. K., Sharma, A., Malaviya, S., Hasan, N., & Singh, P. (2025). Exploring Social Dynamics and Emotional Triggers in the Adoption of Buy Now, Pay Later. *Advances in Consumer Research*, 2(3).
- Kumar, P., Zai, R. Y., & Srivastava, P. K. (2024). Overview of the Marketing Strategies Adopted by Different Pharmaceutical Companies. In *Pharma Marketing and Pharmacoeconomics* (pp. 143-149). Apple Academic Press.
- Shukla, V., & Srivastava, P. K. (2023). Travelling with a vengeance: the influence of social media on revenge tourism. *International Journal of Tourism Policy*, 13(6), 600-605.
- Prasad, A., & Srivastava, P. K. (2024). A COMPREHENSIVE ANALYSIS OF HUMAN RESOURCE POLICIES AND THEIR IMPACT ON EMPLOYEE TURNOVER IN THE HOTEL INDUSTRY IN DELHI NCR. *Journal of Strategic Human Resource Management*, 13(2).
- Sharma, R. K., & Srivastava, P. K. (2022). Impact of E-business on organized retail sector. *International Journal of Early Childhood Special Education*, 9830-9637.
- Rakshit, P., Srivastava, P. K., & Chavan, O. (2022). IoT-Based Personalized Health and Fitness Monitoring System: The Next Big Thing. In *Reinvention of Health Applications with IoT* (pp. 19-30). CRC Press.

- A Khan, F., Singh, M., Shrivastava, P. K., & Bahl, S. (2022). Concept of Caveat Venditor and its Application in Healthcare and Education Secto. *Turkish Online Journal of Qualitative Inquiry*, 13(1).
- Rakshit, P., Srivastava, P. K., & Chavan, O. (2022). Security Concerns with IoT-Based Health and Fitness Systems. In *Reinvention of Health Applications with IoT* (pp. 155-162). CRC Press.
- Srivastava, S. K., Sharma, R. K., Srivastava, P. K., & Srivastava, R. (2021, April). Statistics Review of Indian Automobile Industry Using Correlation& Linear Regression Techniques. In *2021 2nd International Conference on Intelligent Engineering and Management (ICIEM)* (pp. 510-515). IEEE.
- Srivastava, P. K., Srivastava, S. K., Rakshit, P., Kumar, Y., & Kumar, V. (2021). The ecosphere of online service delivery and its growing presence in automobile sector: an extended study of connected technology in Indian outlook. *International Journal of Forensic Engineering*, 5(1), 34-48.
- Rakshit, P., Srivastava, P. K., Afjal, M., & Srivastava, S. K. (2021). Sentimental analytics on Indian big billion day of flip kart and Amazon. *SN Computer Science*, 2(3), 204.
- Rakshit, P., & Srivastava, P. K. (2021, March). Cutting edge IoT technology for smart Indian pharma. In *2021 International Conference on Advance Computing and Innovative Technologies in Engineering (ICACITE)* (pp. 360-362). IEEE.
- Rakshit, P., & Sharma, R. (2021). A study to comprehend role of artificial intelligence in building smart cities. *Engineering and Technology Journal for Research and Innovation (ETJRI) ISSN*, 3(2), 2581-8678.
- Rakshit, P., & Srivastava, P. K. (2021). An Inclusive Analysis to Study Challenges in Building Student Retention Rate on MOOC Platforms-Technology in Education. *Grenze International Journal of Engineering & Technology (GIJET)*, 7(1).
- Afjal, M., Rakshit, P., Dutta, M., & Srivastava, P. K. (2020). A Critical Study To Comprehend Amendments In Indian Education System Post Covid-19. *Solid State Technology*, 63(6), 4079-4085.

- Rakshit, P., Srivastava, P. K., Srivastava, S. K., Kumar, Y., & Kumar, V. (2020). A Critical Study To Understand Privacy Concerns With Covid-19 Patient Data. *Solid State Technology*, 63(6), 4222-4233.
- Srivastava, P. K., Rakshit, P., Kumar, Y., Kumar, V., Singh, C. K., & Afjal, M. (2020). An Intercontinental Comparative Financial Analysis Of Civil Aviation Business. *Solid State Technology*, 63(6), 4127-4138.
- Bhatt, V., Sharma, R. K., & Srivastava, P. K. Emergence and its impact of organized unrecognized retailers in FMCG-food and beverage.
- SHARMA, R. K., & SRIVASTAVA, P. K. FACTORS OF INTERNATIONALIZATION OF SERVICES IN BANKING SECTOR IN INDIA: COMPARISON BETWEEN NATIONALIZED, PRIVATE AND FOREIGN BANKS IN INDIA.
- Kaushik, R., Srivastava, P. K., & Tiwari, S. (2020, January). Services Standardization In Banking Sector In India: Comparison Between Nationalized, Private And Foreign Banks in India. In 2020 International Conference on Computation, Automation and Knowledge Management (ICCAKM) (pp. 505-514). IEEE.
- Alok, P., Gupta, S., & Srivastava, P. K. (2009). Dinning experience and return patronage- study of hotels resturants in Delhi, India. *JOHAR*, 4(2), 45.
- Prasad, A., & Srivastava, P. K. (2008). Practices of yield management-An analytical study with special reference to hotel industry. *JOHAR*, 3(2), 25.
- Manoj Kumar Agarwal, Nazia Hasan, Ambuj Kumar Agarwal, Neema Gupta, Danish Ather, 2025. "Revolutionising Services Through Data-driven Management and Tech-Start Fusion", *Innovate to Integrate: Data-driven Management and TechStrat Fusion Unveiled*, Vishal Jain, Neema Gupta, Ambuj Kumar Agarwal, Girija Chetty, Ramani Kannan
- Gour K, Agarwal M (2025;), "The mediating role of customer perceived ethicality in green banking's impact on trust and loyalty". *International Journal of Ethics and Systems*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJOES-03-2025-0133>
- Agarwal, A., Singh, R., & Agarwal, M. (2025, April 25–26). The AI-EI nexus: Enhancing digital learning to achieve sustainable development goals. In Conference proceedings of the International Conference on Sustainable Development Goals: Challenges, issues & practices. *TMIMT International Journal (ISSN: 2348-988X)*, Teerthanker Mahaveer

Institute of Management and Technology, Teerthanker Mahaveer University, Moradabad, India.

- S. Nanda, G. Singh, N. Hasan, P. Verma, A. Joshi and R. Verma, "Artificial Intelligence And Computational Ability In Digitizing Financial Products And Services By Micro-Entrepreneurs," 2024 4th International Conference on Innovative Practices in Technology and Management (ICIPTM), Noida, India, 2024, pp. 1-5, doi: 10.1109/ICIPTM59628.2024.10563380. keywords: {Companies;Data collection;Artificial intelligence;Financial services;Business;Fintech;Artificial Intelligence Micro-entrepreneurs},
- Dixit, R., & Agarwal, M. (2025). Transactional leadership style and its impact on employee performance in the IT sector. *International Journal of Engineering, Pure and Applied Sciences*. <https://doi.org/10.52783/ijept.47>
- Choudhary, A., & Agarwal, M. (2025, April 25–26). Factors affecting the work life balance (WLB) of IT workforce working in hybrid mode: A model study in Delhi-NCR. In *International Conference on Sustainable Development Goals: Challenges, Issues & Practices* (TMIMT International Journal, ISSN: 2348-988X). Teerthanker Mahaveer University, Moradabad, India.
- Hasan N, Singh AK, Agarwal MK, Kushwaha BP (2025), "Evaluating the role of microfinance institutions in enhancing the livelihood of urban poor". *Journal of Economic and Administrative Sciences*, Vol. 41 No. 1 pp. 114–131, doi: <https://doi.org/10.1108/JEAS-09-2021-0175>
- Hasan, N., Nanda, S., Agarwal, M.K. et al. Evaluating the mediating effect of financial literacy between fintech adoption in microfinance services. *Int J Syst Assur Eng Manag* (2024). <https://doi.org/10.1007/s13198-024-02256-4>
- Hasan N, Agarwal C, Joshi A, Rahal D, Traisa R, Sharma S (2025;), "The two-way influence of green banking practices and green electronic word of mouth in driving green trust and green loyalty: a trust transfer perspective". *International Journal of Ethics and Systems*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/IJOES-10-2024-0326>

- Rastogi, S., & Agarwal, M. (2024). Emotional intelligence among banking professionals. *Journal of Informatics Education and Research*, 4(1), 471-483.
- Hasan, N., Rahal, D., Sharma, P., & Rastogi, C. (2026). Role of technology in relationship between liquidity & profitability management of financial institutions offering microfinance services. *International Journal for Research Trends and Innovation*. <https://doi.org/10.64882/ijrt.v14.iS1.1109>