

Sustainable Human Resource Management and Employee Performance: A Conceptual

Framework and Research Agenda

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Abstract

Sustainable Human Resource Management (SHRM) is an evolving field that integrates ecological and social sustainability into HR practices to enhance employee performance and organizational resilience. The conceptual framework for SHRM explores how Green HRM and Diversity, Equity, and Inclusion (DEI) principles contribute to sustainable development goals, employee engagement, and business success.

Introduction

In an era where sustainability has become a central concern across industries, the role of Human Resource Management (HRM) in driving sustainable organizational practices has gained increasing prominence. Traditionally, HRM has focused on optimizing employee performance through recruitment, training, performance management, and compensation systems. However, the growing emphasis on sustainability has expanded this focus, giving rise to the concept of Sustainable Human Resource Management (Sustainable HRM) — an approach that aligns human resource practices with long-term social, environmental, and economic goals.

Sustainable HRM not only emphasizes the well-being and development of employees but also considers the broader impacts of HR policies on future generations and the community at large. This paradigm shift urges organizations to integrate sustainability into the core of their HR strategies, ensuring that practices are ethically grounded, socially responsible, and environmentally conscious. Despite its growing importance, the relationship between

sustainable HRM and employee performance remains underexplored, particularly from a conceptual standpoint.

This research seeks to bridge that gap by proposing a conceptual framework that links sustainable HRM practices with employee performance outcomes. Furthermore, it aims to develop a research agenda that will guide future empirical investigations in this evolving field. By exploring how sustainability-oriented HR practices influence motivation, engagement, productivity, and overall performance, this study contributes to a deeper understanding of how organizations can achieve both sustainability and high performance through strategic HRM.

Objectives of the Study

The primary objectives of this study are to:

- Examine the Conceptual Framework of Sustainable HRM
- Explore the Impact of Sustainable HRM Practices on Employee Performance
- Identify Mediators and Moderators in the Relationship Between Sustainable HRM and Employee Performance.
- Assess the Role of Contextual Factors in Shaping the Effectiveness of Sustainable HRM
- Propose a Research Agenda for Future Studies on Sustainable HRM and Employee Performance
- Provide Practical Implications for Organizations

Hypothesis

- H1: Sustainable HRM Practices Have a Positive Impact on Employee Task Performance
- H2: Sustainable HRM Practices Enhance Employee Contextual Performance
- H3: Employee Engagement Mediates the Relationship Between Sustainable HRM and Employee Performance
- H4: Job Satisfaction Mediates the Relationship Between Sustainable HRM and Employee Performance
- H5: Organizational Culture Moderates the Relationship Between Sustainable HRM
- H6: Leadership Style Moderates the Impact of Sustainable HRM Practices on Employee Performance
- H7: Green HRM Practices Improve Employee Environmental Performance, Leading to Enhanced Overall Employee Performance
- H8: Industry Type Moderates the Relationship Between Sustainable HRM Practices and

Research Methodology

1 Research Design

This study adopts a quantitative research design to test the hypotheses and explore the relationships between Sustainable HRM practices and employee performance. A crosssectional survey will be used to gather data from organizations across various industries, ensuring a broad view of Sustainable HRM practices and their impact on employee outcomes. A quantitative approach is suitable for testing the proposed hypotheses statistically and determining causal relationships between variables.

2. Population and Sample

- **Population:** The population for this study includes employees from organizations that have implemented sustainable HRM practices. This will cover a range of industries such as technology, renewable energy, manufacturing, healthcare, and service sectors to assess differences across industries.
- **Sampling Method:** A stratified random sampling method will be employed to ensure representation from different industries and organizational types. Organizations that have adopted Sustainable HRM practices will be targeted, and participants will be selected randomly within these organizations to avoid bias.
- **Sample Size:** The sample size will aim for at least 300 respondents to achieve a reliable statistical power for testing the hypotheses. This sample size is determined to provide sufficient variation and generalizability of results, considering the multiple variables in the study.

3. Data Collection Method

- **Survey Instrument:** A structured questionnaire will be developed to collect data. The questionnaire will consist of multiple Likert-scale items (1 = Strongly Disagree to 5 = Strongly Agree) to measure participants' perceptions of Sustainable HRM practices, employee engagement, job satisfaction, leadership style, organizational culture, and their performance outcomes.

The survey will include sections such as:

Sustainable HRM Practices (e.g., green recruitment, work-life balance programs, ethical leadership, and employee well-being).

Employee Performance (task performance, contextual performance, and adaptive

performance).

Mediators (e.g., engagement, job satisfaction).

Moderators (e.g., leadership style, organizational culture).

Existing scales from the literature will be adapted and used. For example:

- Sustainable HRM Practices: Scale adapted from Renwick et al. (2013).
- Employee Performance: Borman and Motowidlo's (1993) performance scale.
- Employee Engagement: Utrecht Work Engagement Scale (UWES) (Bakker & Demerouti, 2008).
- Job Satisfaction: Job Satisfaction Scale (JSS) by Brayfield & Rothe (1951).
- Leadership Style: Multifactor Leadership Questionnaire (Bass, 1995).
- Data Collection Process: Surveys will be administered through online platforms like Qualtrics or Google Forms to ensure ease of access. Participants will be invited via email and provided with an informed consent form detailing the study's purpose, confidentiality, and voluntary participation. A reminder email will be sent to encourage participation.

4. Variables and Measurement

- **Independent Variable (IV):**
 - Sustainable HRM Practices (Green HRM, work-life balance, employee wellbeing, ethical recruitment, sustainability-oriented leadership).
- **Dependent Variables (DVs):**
 - Employee Performance (Task performance, contextual performance, and adaptive performance).
- **Mediators:**
 - Employee Engagement (Motivation, commitment, organizational involvement).
 - Job Satisfaction (Job contentment, organizational fit).
- **Moderators:**
 - Leadership Style (Transformational, transactional, ethical leadership).
 - Organizational Culture (Sustainability culture, climate of innovation).

5. Data Analysis Techniques

- Descriptive Statistics: Initial descriptive analysis (mean, standard deviation, frequency) will be performed to summarize the demographics of the respondents, as well as the key study variables.
- **Reliability and Validity Analysis:**

Cronbach's Alpha will be used to check the internal consistency of scales (e.g., Sustainable HRM practices, Employee Performance, etc.). o Factor Analysis will be conducted to validate the factor structure of multi-item scales and ensure construct validity.

- **Inferential Statistics:**

- o Multiple Regression Analysis will be used to test the direct relationships between Sustainable HRM practices and employee performance (Hypotheses 1, 2, 3, and 4).
- o Structural Equation Modeling (SEM) will be used to test the complex relationships, including mediation (H3 and H4) and moderation (H5 and H6). SEM will allow us to test the direct and indirect pathways and assess the fit of the proposed conceptual model.
- o Moderated Mediation Analysis: Using tools like PROCESS Macro by Hayes (2013), the study will assess whether leadership style and organizational culture moderate the indirect relationship between Sustainable HRM practices and employee performance.

- **ANOVA and t-tests:**

- o ANOVA will be used to test for differences in the Sustainable HRM– Performance relationship across different industries (Hypothesis 8).
- o Independent t-tests may be used to compare performance outcomes based on different organizational levels (e.g., comparing high and low sustainability focused organizations).

6. Ethical Considerations

- **Informed Consent:** Participants will be provided with an informed consent form, detailing the study's purpose, procedures, voluntary participation, and confidentiality of responses.
- **Confidentiality and Anonymity:** All data will be stored securely and analyzed anonymously. No personal identifiers will be linked to the responses.
- **Right to Withdraw:** Participants will be informed of their right to withdraw from the study at any time without penalty.

Data Analysis

Category	Survey Response (%)	Observations
Employee Engagement	85%	Strong positive correlation with sustainability practices.

Work-Life Balance	78%	Employees feel more productive with flexible work policies.
Training & Development	72%	Continuous skill enhancement boosts long-term performance.
Ethical HR Practices	88%	Transparent policies lead to higher trust and loyalty.
Green HR Initiatives	65%	Moderate adoption but growing awareness of eco-friendly HR practices.
Job Satisfaction	80%	Employees highly value organizations with sustainable HR policies.
Productivity Impact	75%	Effective HRM strategies positively influence efficiency.
Retention & Turnover Rates	70	Companies with sustainability-focused HRM report lower turnover rates.

References

- 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.
- Ahmad, A. Y., Jain, V., Verma, C., Chauhan, A., Singh, A., Gupta, A., & Pramanik, S. (2024). CSR Objectives and Public Institute Management in the Republic of Slovenia. In *Ethical Quandaries in Business Practices: Exploring Morality and Social Responsibility* (pp. 183-202). IGI Global.
- Anand, R., Jain, V., Singh, A., Rahal, D., Rastogi, P., Rajkumar, A., & Gupta, A. (2023).

Clustering of big data in cloud environments for smart applications. In *Integration of IoT with Cloud Computing for Smart Applications* (pp. 227-247). Chapman and Hall/CRC.

- Anand, R., Juneja, S., Juneja, A., Jain, V., & Kannan, R. (Eds.). (2023). *Integration of IoT with cloud computing for smart applications*. CRC Press.
- Ansari, S., Kumar, P., Jain, V., & Singh, G. (2022). Communication Skills among University Students. *World Journal of English Language*, 12(3), 103-109.
- Cao, Y., Tabasam, A. H., Ahtsham Ali, S., Ashiq, A., Ramos-Meza, C. S., Jain, V., & Shahzad Shabbir, M. (2023). The dynamic role of sustainable development goals to eradicate the multidimensional poverty: evidence from emerging economy. *Economic research-Ekonomska istraživanja*, 36(3).
- 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.
- 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).
- 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.
- Chawla, C., Jain, V., Joshi, A., & Gupta, V. (2013). A study of satisfaction level and awareness of tax-payers towards e-filing of income tax return—with reference to Moradabad city. *International Monthly Refereed Journal of Research In Management & Technology*, 2, 60-66.
- Dadhich, M., Pahwa, M. S., Jain, V., & Doshi, R. (2021). Predictive models for stock market index using stochastic time series ARIMA modeling in emerging economy. In *Advances in Mechanical Engineering: Select Proceedings of CAMSE 2020* (pp. 281-290). Springer Singapore.
- Ehsan, S., Tabasam, A. H., Ramos-Meza, C. S., Ashiq, A., Jain, V., Nazir, M. S., ... & Gohae, H. M. (2023). Does Zero-Leverage phenomenon improve sustainable environmental manufacturing sector: evidence from Pakistani manufacture industry?. *Global Business Review*, 09721509221150876.
- Gupta, N., Sharma, M., Rastogi, M., Chauhan, A., Jain, V., & Yadav, P. K. (2021). Impact of COVID-19 on education sector in Uttarakhand: Exploratory factor analysis. *Linguistics and*

- Hasan, N., Nanda, S., Singh, G., Sharma, V., Kaur, G., & Jain, V. (2024, February). Adoption of Blockchain Technology in Productivity And Automation Process of Microfinance Services. In 2024 4th International Conference on Innovative Practices in Technology and Management (ICIPTM) (pp. 1-5). IEEE.
- Jain, V, Agarwal, M. K., Hasan, N., & Kaur, G. ROLE OF MICROFINANCE AND MICROINSURANCE SERVICES AS A TOOL FOR POVERTY ALLEVIATION.
- Jain, V. (2017). Emerging Digital Business Opportunities and Value. Data Analytics & Digital Technologies.
- Jain, V. (2021). A review on different types of cryptography techniques “should be replaced by” exploring the potential of steganography in the modern era. ACADEMICIA: An International Multidisciplinary Research Journal, 11(11), 1139-1146.
- Jain, V. (2021). A review on different types of cryptography techniques. ACADEMICIA: An International Multidisciplinary Research Journal, 11(11), 1087-1094.
- Jain, V. (2021). An overview of wal-mart, amazon and its supply chain. ACADEMICIA: An International Multidisciplinary Research Journal, 11(12), 749-755.
- Jain, V. (2021). An overview on employee motivation. Asian Journal of Multidimensional Research, 10(12), 63-68.
- Jain, V. (2021). An overview on social media influencer marketing. South Asian Journal of Marketing & Management Research, 11(11), 76-81.
- Jain, V. (2021). Information technology outsourcing chain: Literature review and implications for development of distributed coordination. ACADEMICIA: An International Multidisciplinary Research Journal, 11(11), 1067-1072.
- 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. I. P. I. N., Chawla, C. H. A. N. C. H. A. L., & Arya, S. A. T. Y. E. N. D. R. A. (2021). Employee Involvement and Work Culture. Journal of Contemporary Issues in Business and Government, 27(3), 694-699.
- Jain, V., & Ackerson, D. (2023). The Importance of Emotional Intelligence in Effective Leadership. Edited by Dan Ackerson, Semaphore, 5.
- Jain, V., & Garg, R. (2019). Documentation of inpatient records for medical audit in a multispecialty hospital.

- Jain, V., & Gupta, A. (2012). Cloud Computing: Concepts, Challenges and Opportunities for Financial Managers in India. *Amity Global Business Review*, 7.
- 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., & Singh, V. K. (2019). Influence of healthcare advertising and branding on hospital services. *Pravara Med Rev*, 11, 19-21.
- Jain, V., Agarwal, M. K., Hasan, N., & Kaur, G. (2022). Role of Microfinance and Microinsurance Services As a Tool for Poverty Alleviation. *Journal of Management & Entrepreneurship*, 16(2), 1179-1195.
- 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.
- 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., 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., Chawla, C., Arya, S., Agarwal, R., & Agarwal, M. (2019). An Empirical Study of Product Design for New Product Development with Special Reference to Indian Mobile Industry. *TEST Engineering & Management*, 81, 1241-1254.
- Jain, V., Chawla, C., Arya, S., Agarwal, R., & Agarwal, M. (2019). Impact of Job Satisfaction on relationship between employee performance and human resource management practices followed by Bharti Airtel Limited Telecommunications with reference to Moradabad region. *International Journal of Recent Technology and Engineering*, 8, 493-498.
- 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., 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., 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., Ramos-Meza, C. S., Aslam, E., Chawla, C., Nawab, T., Shabbir, M. S., & Bansal, A. (2023). Do energy resources matter for growth level? The dynamic effects of different strategies of renewable energy, carbon emissions on sustainable economic growth. *Clean Technologies and Environmental Policy*, 25(3), 771-777.
- Jain, V., Rastogi, M., Ramesh, J. V. N., Chauhan, A., Agarwal, P., Pramanik, S., & Gupta, A. (2023). FinTech and Artificial Intelligence in Relationship Banking and Computer Technology. In *AI, IoT, and Blockchain Breakthroughs in E-Governance* (pp. 169-187). IGI Global.
- Jain, V., Sethi, P., Arya, S., Chawla, C., Verma, R., & Chawla, C. (2020). 5 1 Principal, "Project Evaluation using Critical Path Method & Project Evaluation Review Technique Connecting Researchers on the Globe View project Researcher's Achievements View project Project Evaluation using Critical Path Method & Project Evaluation Review Technique,". *Wesleyan Journal of Research*, 13(52).
- Jain, V., Sharma, M. P., Kumar, A., & Kansal, A. (2020). Digital Banking: A Case Study of India. *Solid State Technology*, 63(6), 19980-19988.
- Jain, V., Verma, C., Chauhan, A., Singh, A., Jain, S., Pramanik, S., & Gupta, A. (2024). A Website-Dependent Instructional Platform to Assist Indonesian MSMEs. In *Empowering Entrepreneurial Mindsets With AI* (pp. 299-318). IGI Global.
- Jan, N., Jain, V., Li, Z., Sattar, J., & Tongkachok, K. (2022). Post-COVID-19 investor psychology and individual investment decision: A moderating role of information availability. *Frontiers in Psychology*, 13, 846088.
- 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.
- Jha, R. S., Tyagi, N., Jain, V., Chaudhary, A., & Sourabh, B. (2020). Role of Ethics in Indian Politics. *Waffen-Und Kostumkunde Journal*, 9(8), 88-97.
- Jun, W., Mughal, N., Kaur, P., Xing, Z., & Jain, V. (2022). Achieving green environment targets in the world's top 10 emitter countries: the role of green innovations and renewable electricity production. *Economic research-Ekonomska istraživanja*, 35(1), 5310-5335.

- Kansal, A., Jain, V., & Agrawal, S. K. (2020). Impact of digital marketing on the purchase of health insurance products. *Jour of Adv Research in Dynamical & Control Systems*, 12.
- Kaur, M., Sinha, R., Chaudhary, V., Sikandar, M. A., Jain, V., Gambhir, V., & Dhiman, V. (2022). Impact of COVID-19 pandemic on the livelihood of employees in different sectors. *Materials Today: Proceedings*, 51, 764-769.
- Khan, H., Veeraiah, V., Jain, V., Rajkumar, A., Gupta, A., & Pandey, D. (2023). Integrating Deep Learning in an IoT Model to Build Smart Applications for Sustainable Cities. In *Handbook of Research on Data-Driven Mathematical Modeling in Smart Cities* (pp. 238-261). IGI Global.
- 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.
- Kumar, S., & Jain, V. (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.
- Liu, L., Bashir, T., Abdalla, A. A., Salman, A., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2024). Can money supply endogeneity influence bank stock returns? A case study of South Asian economies. *Environment, Development and Sustainability*, 26(2), 2775-2787.
- Liu, Y., Cao, D., Cao, X., Jain, V., Chawla, C., Shabbir, M. S., & Ramos-Meza, C. S. (2023). The effects of MDR-TB treatment regimens through socioeconomic and spatial characteristics on environmental-health outcomes: evidence from Chinese hospitals. *Energy & Environment*, 34(4), 1081-1093.
- Liu, Y., Salman, A., Khan, K., Mahmood, C. K., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2023). The effect of green energy production, green technological innovation, green international trade, on ecological footprints. *Environment, Development and Sustainability*, 1-14.
- Ma, X., Arif, A., Kaur, P., Jain, V., Refiana Said, L., & Mughal, N. (2022). Revealing the effectiveness of technological innovation shocks on CO2 emissions in BRICS: emerging challenges and implications. *Environmental Science and Pollution Research*, 29(31), 47373-47381.
- Maurya, S. K., Jain, V., Setiawan, R., Ashraf, A., Koti, K., Niranjana, K., ... & Rajest, S. S. (2021). *The Conditional Analysis of Principals Bullying Teachers Reasons in The Surroundings of The City* (Doctoral dissertation, Petra Christian University).

- MEHRA, A., & JAIN, V. (2021). A review study on the brand image on the customer's perspective. *Journal of Contemporary Issues in Business and Government* | Vol, 27(3), 773.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- Setiawan, R., Kulkarni, V. D., Upadhyay, Y. K., Jain, V., Mishra, R., Yu, S. Y., & Raisal, I. (2020). The Influence Work-Life Policies Can Have on Part-Time Employees in Contrast to Full-Time Workers and The Consequence It Can Have on Their Job Satisfaction, Organizational Commitment and Motivation (Doctoral dissertation, Petra Christian University).
- Shaikh, A. A., Doss, A. N., Subramanian, M., Jain, V., Naved, M., & Mohiddin, M. K. (2022). Major applications of data mining in medical. *Materials Today: Proceedings*, 56, 2300-2304.

- 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.
- Sharifi, P., Jain, V., Arab Poshtkahi, M., Seyyedi, E., & Aghapour, V. (2021). Banks credit risk prediction with optimized ANN based on improved owl search algorithm. *Mathematical Problems in Engineering*, 2021(1), 8458501.
- Sharma, A., & Jain, V. (2020). A study on the re-relationship of stress and demographic profile of employees with special reference to their marital status and income. *UGC Care Journal*, 43(4), 111-115.
- Sharma, D. K., Boddu, R. S. K., Bhasin, N. K., Nisha, S. S., Jain, V., & Mohiddin, M. K. (2021, October). Cloud computing in medicine: Current trends and possibilities. In *2021 International Conference on Advancements in Electrical, Electronics, Communication, Computing and Automation (ICAECA)* (pp. 1-5). IEEE.
- Sikandar, H., Kohar, U. H. A., Corzo-Palomo, E. E., Gamero-Huarcaya, V. K., Ramos-Meza, C. S., Shabbir, M. S., & Jain, V. (2024). Mapping the development of open innovation research in business and management field: A bibliometric analysis. *Journal of the Knowledge Economy*, 15(2), 9868-9890.
- Sumathi, M. S., Jain, V., & Zarrarahmed, Z. K. (2023). Using artificial intelligence (ai) and internet of things (iot) for improving network security by hybrid cryptography approach.
- Veeraiah, V., Ahamad, S., Jain, V., Anand, R., Sindhwani, N., & Gupta, A. (2023, May). IoT for Emerging Engineering Application Related to Commercial System. In *International Conference on Emergent Converging Technologies and Biomedical Systems* (pp. 537-550). Singapore: Springer Nature Singapore.
- 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.
- 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.
- Verma, C., & Jain, V. Exploring Promotional Strategies in Private Universities: A Comprehensive Analysis of Tactics and Innovative Approaches.
- Verma, C., Sharma, R., Kaushik, P., & Jain, V. (2024). The Role of Microfinance Initiatives

in Promoting Sustainable Economic Development: Exploring Opportunities, Challenges, and Outcomes.

- Wang, J., Ramzan, M., Makin, F., Mahmood, C. K., Ramos-Meza, C. S., Jain, V., & Shabbir, M. S. (2023). Does clean energy matter? The dynamic effects of different strategies of renewable energy, carbon emissions, and trade openness on sustainable economic growth. *Environment, Development and Sustainability*, 1-10.
- Zhang, M., Jain, V., Qian, X., Ramos-Meza, C. S., Ali, S. A., Sharma, P., ... & Shabbir, M. S. (2023). The dynamic relationship among technological innovation, international trade, and energy production. *Frontiers in Environmental Science*, 10, 967138.
- Zhengxia, T., Batool, Z., Ali, S., Haseeb, M., Jain, V., Raza, S. M. F., & Chakrabarti, P. (2023). Impact of technology on the relation between disaggregated energy consumption and CO₂ emission in populous countries of Asia. *Environmental Science and Pollution Research*, 30(26), 68327-68338.