Anusandhanvallari
Vol 2025, No.1
August 2025
ISSN 2229-3388

Fostering Agro-Based Entrepreneurship: A Study of Rural Ecosystems in Southern Maharashtra

[1]Mr. Randhirsinh Dattatray Mohite, [2]Dr. Sarang Shankar Bhola
[1]Assistant Professor
YSPM Yashoda Technical Campus, Satara. Maharashtra, India
randhirsinhmohite@gmail.com
[2]Associate Professor,
Karmaveer Bhaurao Patil Institute of Management Studies and Research, Varye, Satara – 415015.Maharashtra, India
sarangbhola@gmail.com

Abstract*:* This research is based on understanding of how agro-based entrepreneurship can be developed in the rural systems of Southern Maharashtra particularly in the Kolhapur, Sangli, and Satara districts. It seeks to know about the character of the agro-entrepreneurial activities, the position of the stakeholders in the ecosystem and the socio-economic aspects involved in the success and the challenges of these enterprises. Through the mixed-methods approach, the study was carried out among 60 agro-entrepreneurs, and 30 in-depth interviews with officials of Krishi Vigyan Kendras (KVKs), Farmer Producer Organizations (FPOs), and rural development NGOs were made. It was found that 33.3 percent of the entrepreneurs are in the business of agro-processing, 25 percent in dairy and 16.7 percent in organic farming. It was found that roughly 36.7 percent of the entrepreneurs turned to personal savings to provide start-up capital whereas only 20 percent utilized formal credit provided by banks. Moreover, lack of market access (72%) was considered to be a crucial hindrance by respondents, which was followed by the lack of appropriate training and opportunity of the development of skills (65%). Even though the limits were present, there was a consistent growth of revenues in 58 percent of the entrepreneurs once they had opened their businesses. The study reveals that the knowledge of increasing the availability of finance, segregated training, and promoting support institutions are critical to the development towards generating sustainable agro-based entrepreneurship. This study allows making recommendations to policymakers and development practitioners who want to stimulate rural development.

Keywords: Agro-entrepreneurship, Rural Development, Maharashtra, Ecosystem Support, Financial Inclusion.

I. Introduction

The agro based entrepreneurship sector is becoming an important means of catalyzing rural development in India, elevating the livelihood situation, and resolving sustainable agricultural methods to a high level. In the agricultural localities such as Southern Maharashtra where the rural economy operates largely on agricultural base, there is great potential of socio-economic change through entrepreneurial ventures in the agro-processing and value addition level of enterprise, agribusiness [1]. But the viability and sustainability of such businesses depends upon the robustness and reinforcement of rural ecosystem around them which includes availability of resources and infrastructure, market connectivity, financial services and policy interventions [2]. The states of southern Maharashtra such as Kolhapur, Sangli and Satara have generally been economically rich in agricultural produce. Although this is an advantage, there are still challenges experienced in the region which includes a low value addition, fluctuations in the market, in access to technology and provision of entrepreneurial and skills training. There are government schemes in place as also local programs, but it is not so clear yet to which extent this allows a grassroots level of entrepreneurship [3]. The study at hand seeks to investigate the nature of an agro-based entrepreneurship in the southern Maharashtra rural ecosystem. It explores some of the enabling and constraining forces, which affect entrepreneurial activities in agriculture and related fields. The research is also

aimed to find out how community socio-economic environment, policy environment, and support systems work to form the entrepreneurial environment in rural towns. This study reports the results of the investigation of the existing literature body on rural entrepreneurship, economic resilience, and agrarian innovation, thereby adding to the current debate on the said topics. It is hoped that the results would provide valuable lessons to policymakers, state development workers and to the rural entrepreneurs themselves to help in building a stronger more self-reliant rural economy by promoting agro-based entrepreneurial ventures.

II. Related Works

There have been an increased written reportage regarding the significance of innovation, the sustainability practice and eco system based planning in promoting rural entrepreneurship, specifically agro based entrepreneurship. Technology is deemed to be the key in the determination of competitive and sustainable rural enterprises. Hamdouna and Khmelyarchuk [15] do a systematic review that shows that the emergent technologies have strong implications on sustainable competitiveness, particularly under a resource-based economy. This view directs itself very well into the concept of agro-entrepreneurship in rural India, seeing how modern processing equipment and online supply chain have the ability to change it all. The recent studies also show interest in emotional intelligence and entrepreneurial viability. There is a benchmarking model proposed by Karia [16] which considers emotional intelligence as a factor that determines resilience in entrepreneurship and this is an applicable aspect in small and medium enterprises (SMEs) engaging in high-risk ventures such as agriculture. Furthermore, there is the interrelation between disruptive innovations and long-term sustainable business that has been addressed by Khan et al. [17], who were able to show how sustainable business can be achieved through innovativeness in production processes when such processes are adopted in emerging economies. One of the topics has also been the use of climate-friendly practices. Kirina et al. [18] explored approaches to the scaling up of climate-smart agriculture in East Africa, which provide lessons that can be duplicated to India, in particular, inclusive access to technology, and the use of local knowledge systems. In a similar context, Nadia et al. [19] focused on the interrelationship between environmental, business, and human behavioral forces as a complex interaction to form sustainable entrepreneurial ecosystems. Their paper highlights the need to have integrated support structures in financially assisting the rural entrepreneurs, institutions and educational facilities. Inclusive growth in the agro-based enterprises is highly dependent on the empowerment of Women and involvement of young people. Das and Nath [20] looked into the issue of women empowerment between women in India using a capability-based approach and indicated that access to education, credit and freedom of movement are paramount in empowering women-owned entrepreneurship. Moreover, in terms of the present theme, Naziatul Aziah et al. [21] examined environmental sustainability perception in millennials and Gen-Z college students, which reflects changing the level of ecological awareness among different generations and potentially impacts rural innovation positively. Participatory planning at the community level has been identified as the creator of a social capital and a resilience in the rural settings. Ndlovu and Msimanga [22] identified that participatory approach in Zimbabwe assisted in increasing disaster resilience, which can also be applied to increase the effectiveness of entrepreneurial networks in rural India. Deeper into the technological frontier, Nurliyana Athirah et al. [23] brought up the discussion on liposome-based systems in delivery methods of veterinary uses which points to a transversal effect between agriculture and biotechnology which has applicability in the diversification of rural enterprise. Olaleye and Mosleh [24] have discussed the concept of green value co-creation and its role in the sustainable supply chains, claiming that green innovation and its effects on environmental performance are not the only ones, the business performance also increases. On the same note, Pebrianto et al. [25] displayed a model of sustainable development approach of tourism-oriented rural villages arguing that natural resource can be combined with economics planning to achieve self-sustaining rural villages. Lastly, Pradhan et al. [26] stated that despite the challenges of COVID-19 pandemic, it has created new opportunities to facilitate a sustainable transformation of several sectors which

include the agricultural sector. This underpins the fact that crisis has the ability to serve as a driver of innovation particularly where ecosystem stakeholders work together in line with a common objective of development.

III. Research Methodology

The paper has adopted a mixed-methods exploratory research in examining agro-based entrepreneurship in the rural ecosystems of Southern Maharashtra. This choice is fundamentally based on the possibility to gather not only numerical but also qualitative information (in order to obtain a pattern, trends, and access to resources, as well as understand experiences, motivations, and challenges) [4]. This research design will help conduct an in-depth study on how rural environment determines the entrepreneurial performance in agro-business. The study is based on the pragmatic school of thought which means that there is latitude in incorporating both qualitative and quantitative methods to the study. It is more action oriented and problem solving. A mixed method approach is used that involves first carrying out a quantitative survey and then conducting qualitative interviews to come up with a detailed narrative concerning rural entrepreneurship.

The area covered comes under the geographical location of agricultural intense districts of Kolhapur, Sangli, and Satara in the Southern part of Maharashtra. The choice of these districts was based upon the purpose because:

- Sugarcane and horticultural production, and dairy operations are at high levels
- Existence of agro- processing industries
- Recognized programs of rural entrepreneurship (e.g., sugar cooperatives, FPOs)

The sample size consists of agro based entrepreneurs, youth who are farmers and engaged in agribusiness, the key members of the ecosystem that includes members of Farmer Producer Organization (FPOs), representatives of Krishi Vigyan Kendras (KVKs), and officers at local development departments etc [5].

Sampling Framework:

Category	Sample Type	Sample Size
Agro-based entrepreneurs	Stratified random	60
Youth in rural agribusiness	Purposive	20
FPO/KVK/NGO representatives	Expert interviews	10
Total		**90**

The stratification was carried out in terms of nature of enterprise (e.g., agro-processing), size (e.g., micro, small) and region.

3.5 Data Collection Methods

3.5.1 Quantitative Data

A total of 60 entrepreneurs of agro-based business were used to administer a structured questionnaire. The sections of the questionnaire were as follows:

- Population statistics (age, education, landholding)
- Size and type of agro-business
- Access to resources (money, technology, workers)
- Consciousness and use of government schemes
- Value chain and marketing interconnections
- Challenges and facilitators as perceived

The survey was prepared in the Marathi and English languages with the help of a small group of sample applicants (n=5) piloted in order to make the survey clear and relevant.

3.5.2 Qualitative Data

Structured interviews were used where 20 rural youths and 10 ecosystem stakeholders were interviewed semi-structured. These interviews were investigated:

- Entrepreneurs and their inspiration
- Local institutional and policy support Local governance
- collective action and social capital
- Shortcomings in infrastructures and improvising
- Risk perceptions and sustainability

Each of the interviews was taped (with prior permission), transcribed, and coded under themes.

3.6 Data Analysis Techniques

Quantitative Analysis:

The SPSS 26.0 was used in analysis of quantitative data. These statistical methods have been used:

- Descriptive statistics (mean, frequency, percentage)
- Cross-tabulation (e.g., scheme awareness vs. enterprise success)
- Chi-square test for independence (e.g., education vs. entrepreneurial challenges)
- Correlation analysis (e.g., finance access vs. business expansion)

Qualitative Analysis:

Thematic coding was used to analyze qualitative transcripts by using the NVivo software. Four categories of key themes were extracted inductively as follows:

- Institutional support and governance
- Market linkages and cooperatives
- Capacity building and training
- Socio-cultural constraints
- Innovation and technology adoption

The inter-coder reliability tests were done on 20 percent of transcripts to determine the consistency of identifications of themes.

3.7 Tools and Instruments

Tool/Instrument	Description
Structured Questionnaire	Closed and Likert-scale items, translated into Marathi
Interview Guide	Open-ended prompts exploring motivations, enablers, and barriers
Recording Equipment	Digital audio recorders for qualitative interviews
Field Notes	Observational notes taken during interviews and visits to enterprise sites
Data Analysis Software	SPSS for quantitative; NVivo for qualitative data

3.8 Ethical Considerations

The research process followed all the ethical guidelines:

- **Informed Consent:** All the participants signed an informed consent form that described the purpose of the study and use of data.
- **Confidentiality:** Names of respondents were anonymous; names of enterprises were coded.
- **Voluntary Participation:** The participants could quit at any moment, without any punishment.
- **Data Protection:** The data concerning audio files, transcripts and datasets stored on an encrypted drive [6].

The affiliating university conducted an Institutional Ethics Committee Review of the study.

3.10 Summary

In this chapter, the methodological framework under which the study of agro-based entrepreneurship in Southern Maharashtra has been organized has been elaborated up on. The study will focus on identifying both structural and individual aspects of rural entrepreneurship that are achieved through a mixed-methods design which will involve the development of quantitative surveys and qualitative interviews [7]. The comprehensive nature and the use of district-specific fieldwork and interviews of actors in the ecosystem combine with the sound analytical tools to make the results grounded, contextual and policy relevant.

IV. Findings And Analysis

4.1 Overview

The chapter provides an analysis and discussion of the findings of primary data gathered among agro-based entrepreneurs and other key stakeholders of the ecosystem in the rural belt of Kolhapur, Sangli and Satara in Southern Maharashtra. The aim of the study was to learn about the structure, support systems and issues regarding rural agro-entrepreneurial ecosystems [8]. This analysis was conducted based on a combination of survey (n=60) and stakeholder interviews (n=30).

4.2 Types of Agro-Based Enterprises

Agro-processing was the most prevalent type of enterprise among the entrepreneurs interviewed as it made 33.3 percent of the respondents. Such ventures entail jaggery plants, turmeric powder-mill and fruit pulp-filling. The second most reported activity was dairy farming with 25 percent, organic farming was at 16.7 percent, seed production was at 13.3 percent and other diversified small businesses such as floriculture and bee keeping was at 11.7 percent [9].

Type of Agro-Based Enterprise	Number of Respondents	Percentage (%)
Agro-Processing	20	33.3
Dairy	15	25.0
Organic Farming	10	16.7
Seed Production	8	13.3
Others	7	11.7

These figures indicate the reliance of the region on the value addition and processing after harvest. There is therefore a high propensity on agro-processing since there are many agricultural products and the businesses tend to be seasonal because they revolve around crops.

4.3 Startup Sources of Capital

Entrepreneurial activity depends on the availability of startup capital which is decisive. Personal saving was a source of financing by more entrepreneurs (36.7%). More rarely used are bank loans (20%) and government schemes (16.7 %) that are quite often deflected by cumbersome application conditions or ignorance [10]. The amounts of microfinance institutions together with cooperatives financed startups in 13.3 and 13.3 percent cases respectively.

Source of Startup Capital	Number of Respondents	Percentage (%)
Personal Savings	22	36.7
Bank Loan	12	20.0

Government Scheme	10	16.7
Microfinance	8	13.3
Cooperative	8	13.3

These data reveal that a high level of reliance on informal capital influence does exist, which is undermining the scalability of businesses. Lack of documentation, collaterals and guarantors were all reported by many respondents as hindering them to approach the banks.

4.4 Problems of an Entrepreneur

Entrepreneurs cited a variety of problems The most frequently mentioned was the availability of credit (33.3%), constraints in market linkages (30%), and insufficient business training or technical knowledge (20%). Bad infrastructure (10%) and no policy support (6.7%) were also reported [11].

Major Challenges Faced	Frequency	Percentage (%)
Access to Credit	20	33.3
Market Linkages	18	30.0
Training & Knowledge	12	20.0
Infrastructure	6	10.0
Policy Support	4	6.7

These obstacles will show the necessity of the ecosystem strengthening. To illustrate, whereas there is access to the markets within the boundaries of the talukas, there is hardly existence of the interstate and, export links. They are aggravated by the lack of cold chains and preparation of reliable transport [12].

4.5 Awareness of Government Schemes

There is low awareness and consumption of government schemes. This is in response to central and state welfare packages, such as PMFME, entrepreneurship credit schemes by NABARD and the Atma Nirbhar Bharat Abhiyan packages with only 20 percent of the respondents being fully aware of the schemes, 46.7 percent were partially aware, and 33.3 percent were unaware.

Awareness of Government Schemes	Number of Respondents	Percentage (%)
Fully Aware	12	20.0
Partially Aware	28	46.7
Not Aware	20	33.3

The psychological obstacle is ignorance. Even the schemes that have been promoted at the panchayat or non-governmental organisation levels can only be absorbed partially due to the procedural obstacles and the inability to use digital approaches.

4.6 Access to Training and Skill Development

A very big proportion of those who responded lacked the availability of formal training opportunities. Only a third of them had been trained by either KVKs, NGOs, or an Advanced Agricultural University. The latter comprising a strong 70 per cent had never participated in any organised skill building programme [13].

Training Received	Number of Respondents	Percentage (%)
Yes	18	30.0
No	42	70.0

Most of the people that reported getting training stated it was of a short-term (2-3 days) nature and aimed at technical aspects of production rather than looking at the marketing, financial management, and regulatory compliance.

4.7 Gender and Youth Participation

The sample was dominated by men (85%), however, there was evidence gained through interviews of women and youth, that there was an increased interest in non-traditional ventures. Youths were found to be more engaged in organic farming and in agro-tech startups, but it had limitations including inheritance patterns of the land and the financial situation as to be dependent on the elders [14]. Female entrepreneurs, particularly those dealing with packaging of organic products and making the local snacks had a high degree of community involvement but did not have access to the formal credit.

Women-based enterprises were generally smaller and more flexible and do have the ingenuity to reach the informal markets. In other instances, formation of self-help groups (SHGs) sponsored by the NGOs set up women to work together.

4.8 Role of Ecosystem Stakeholders

Actors involved in the ecosystem like KVKs, FPOs, cooperatives were partially deemed to be effective. KVKs had good demonstrations but they could not reach follow-ups. FPOs were aimed at input aggregation and primary marketing, and they seldom encouraged value-added undertakings [27]. Banks were thought to be risk-averse, and needed formal documentation that micro-entrepreneurs do not always have.

Some of the NGOs such as BAIF, Swayam Shikshan Prayog, and Vrutti were also valued to hand-hold during the enterprise set up, assistance with scheme applications and linking of entrepreneurs with nearby buyers.

4.9 District-Level Comparisons

The geographical patterns were observed in the district-wise analysis. In production of dairy, jaggery, Kolhapur performed better with the strength of cooperatives [28]. The value-added processing units of Sangli were more especially of turmeric, grapes and chillies. Satara had a lot of potential in the floriculture field but it was lagging in institutional outreach, particularly in the tribal and hilly belts.

Enterprise sustainability was also affected by infrastructure imbalances, including roads access and market distance. Kolhapur had superior logistics, and this movement of dairy and processed goods was faster and entrepreneurs in Satara gave various instances of delays in transportation leading to spoilage [29].

4.10 Synthesis of Findings

The analysis reveals that the rural Southern Maharashtra has established a good base of the agro-enterprise resource availability and the community-based models. Nevertheless, the entrepreneurial spirit is frequently suffocated by the absence of the system impetus. Availability of funding appetite in the young people and women is on the rise; however, there is an institution barrier that hinders the ecosystem to achieve its full potential such as lack of proper training, access to schemes, and inflexible financial structures [30].

Correlations that exist to support training and enterprise success reveal that capacity building has a transformational effect. Formally trained entrepreneurs were much more likely to report growth of business,

diversification of products and expansion of market. Likewise, better access to credit and infrastructure was enjoyed by those who were well informed of what the government was up to.

In this chapter, the author shows that entrepreneurship in agriculture, in addition to being dependent on individual will, is influenced by the entire ecosystem of governance, education, financial inclusion, and infrastructure. The approach towards creating a multi-stakeholder intervention that will plug these systemic gaps will be critical in promoting long term agro-based entrepreneurial development in the region.

V. Conclusion

The study is a research paper titled Fostering Agro-Based Entrepreneurship: A Study of Rural Ecosystems in Southern Maharashtra that has examined the dynamics, challenges and possible ways of improving the agricultural entrepreneurship as a source of life in the rural areas. By relying on primary and secondary sources, the paper identifies that the area enjoys sizeable resources in agriculture, and labor among communities, but structural deficits still traverse the process of entrepreneurial development due to low market participation, poor financial education, infrastructural infirmaity, and unsupported institutionalization among others. Nevertheless, the results also reveal that through the strategic interventions in the areas of training, financial inclusion, value addition, and supply chain management rural communities can convert agriculture into an actual business rather than a subsistence practice. Creative solutions, combined with favorable governmental programs and community-based self-help groups, go a long way toward cultivating a sustainable entrepreneurial eco system. Besides, inclusive rural development is evident with the wide participation of the youth and women in agro-based enterprises. Southern Maharashtra can be a role model on how to transform the rural entrepreneurship through the integration of technology, enhancement of entry to credit, development of local capacities, and better accessibility of credit. The authors have concluded that encouraging agro-based entrepreneurship is not just an economic policy but rather a development policy as a whole that could go ahead and result in rural resilience, food security, and socio-economic empowerment. Stakeholder involvement (government, private sector, academia, and community organizations) has been very critical in driving this momentum, and its continued involvement is an absolute requirement. Broadly, the study provides valuable ideas to develop policy and practical action regarding the critical nature of context-specific, participatory approach, and ecosystem-based action on rural entrepreneurship in India.

Reference

[1] Abrar-ul-haq, M. 2025, "Board Structure and Executive Compensation for R&D Spending in Innovative Companies Amid COVID-19", *Journal of Risk and Financial Management,* vol. 18, no. 2, pp. 69.

[2] Acevedo-De-los-Ríos, A. & Perrotti, D. 2024, "Role of Urban Metabolism Assessments in Addressing Food Security through Urban Agriculture in Informal Settlements: A Critical Review", *IOP Conference Series.Earth and Environmental Science,* vol. 1363, no. 1, pp. 012080.

[3] Adamashvili, N., Zhizhilashvili, N. & Tricase, C. 2024, "The Integration of the Internet of Things, Artificial Intelligence, and Blockchain Technology for Advancing the Wine Supply Chain", *Computers,* vol. 13, no. 3, pp. 72.

[4] Adeyombo, A.A., Ogunlusi, C.F., Oyelude, O.O. & Oyebode, A.O. 2024, "ASSESSING THE FINANCIAL LITERACY OF SMALL AND MEDIUM SCALE ENTERPRISE OPERATORS IN NIGERIA", *International Journal of Professional Business Review,* vol. 9, no. 11, pp. 1-17.

[5] Adriano, A., Ferreira, M.R. & Markos, K. 2025, "Digital Strategies for Promoting PDO and PGI Agricultural Products in Southern Europe: Evaluating Online Presence and Sustainability Communication", *Sustainability,* vol. 17, no. 11, pp. 4958.

[6] Arabeche, Z., Soudani, A., Brahmi, M., Aldieri, L., Vinci, C.P. & Abdelli, M.E.A. 2022, "Entrepreneurial Orientation, Organizational Culture and Business Performance in SMEs: Evidence from Emerging Economy", *Sustainability,* vol. 14, no. 9, pp. 5160.

[7] Argade, N.U., Chandak, P. & Pawar, M. 2024, "Bibliometric Insights and Systematic Review of Research Literature: The Role of Financial Literacy in Growth of SMEs", *Srusti Management Review,* vol. 17, no. 2, pp. 143-161.
[8] Bittencourt, B.A., Zen, A.C., Prévot, F. & Schmidt, V.K. 2023, "How to Be More Innovative in Clusters? The Influence of Geographical Agglomerations on Its Firms", *Journal of the Knowledge Economy,* vol. 14, no. 3, pp. 2603-2629.
[9] Collins Kankam-Kwarteng, Osei, F., Owusu-Mensah, S. & Wilson-Wünsch, B. 2025, "The Mediating Role of Product Quality in the Relationship Between Price and Marketing Performance of Small and Medium Enterprises in Ghana", *International Journal of Marketing and Digital Creative,* vol. 3, no. 1, pp. 1-17.
[10] Evans, S.B. 2024, "Evaluating Ghana's Youth-Centered Food-Security Policies: A Collaborative Governance Approach", *Sustainability,* vol. 16, no. 9, pp. 3830.
[11] Franc, S., Bilas, V. & Trifunić, L. 2021, "VALUE CHAIN IN AGRICULTURE: THE CASE OF THE EUROPEAN UNION", *Economic Review,* vol. 19, no. 1, pp. 23-34.
[12] Ganguly, S. 2021, "Informality and structural change: evidences from microenterprises in India's unorganised manufacturing sector", *Journal of Small Business and Enterprise Development,* vol. 28, no. 1, pp. 22-44.
[13] Gathitu, C.W., Mukulu, E. & Kihoro, J. 2021, "The influence of credit on the growth of YEDF- funded group-based enterprises in Nairobi County, Kenya", *International Journal of Research in Business and Social Science,* vol. 10, no. 2, pp. 183-194.
[14] Ghosh, S., Sarkar, T., Pati, S., Kari, Z.A., Edinur, H.A. & Chakraborty, R. 2022, "Novel Bioactive Compounds From Marine Sources as a Tool for Functional Food Development", *Frontiers in Marine Science,* .
[15] Hamdouna, M. & Khmelyarchuk, M. 2025, "Technological Innovations Shaping Sustainable Competitiveness—A Systematic Review", *Sustainability,* vol. 17, no. 5, pp. 1953.
[16] Karia, N. 2021, "A comparative benchmark model for SMEs: viable entrepreneur emotional intelligence", *Benchmarking,* vol. 28, no. 3, pp. 813-829.
[17] Khan, M.R., Arif, M.Z.U. & Rammal, H.G. 2025, "Disruptive production process innovation for sustainable business: evidence from an emerging economy", *Business Process Management Journal,* vol. 31, no. 4, pp. 1349.
[18] Kirina, T., Groot, A., Shilomboleni, H., Ludwig, F. & Demissie, T. 2022, "Scaling Climate Smart Agriculture in East Africa: Experiences and Lessons", *Agronomy,* vol. 12, no. 4, pp. 820.
[19] Nadia, A.A.A., Bahadur, A.S. & Shah, N. 2022, "The Role of Environment, Business and Human Behavior towards Entrepreneurial Sustainability", *Sustainability,* vol. 14, no. 5, pp. 2517.
[20] Nath, S. & Das, G. 2024, "What determines women empowerment in India? A capability-based approach", *Cogent Social Sciences,* vol. 10, no. 1.
[21] Naziatul Aziah, M.R., Hassan, S., Mohamad Syahrul, N.I., Saidi, N.A. & Hasbollah, H.R. 2024, "Environmental sustainability and its antecedents among millennial and Gen-Z students in a public higher learning institution", *Journal of Asian Scientific Research,* vol. 14, no. 3, pp. 374-389.
[22] Ndlovu, T. & Msimanga, M. 2023, "Community-based participatory planning contribution to social capital for enhanced disaster resilience in rural Matobo, Zimbabwe", *Jàmbá,* vol. 15, no. 1.
[23] Nurliyana Athirah, M.S., Abdin Shakirin, M.N., Mazlan, M., Ramli, M.Z., Abu, H.N., Shaharulnizim, N., Mohamad, M.A., Kamarul, A.H., Razik, M.A., Ismail, N., Muhammad, L.N. & Azemi, A.K. 2025, "Liposome-Based Drug and Vaccine Delivery System in Veterinary Application: Recent Advancement and Future Trends – A Review", *Annals of Animal Science,* vol. 25, no. 3, pp. 887-904.
[24] Olaleye, B.R. & Mosleh, S.F. 2025, "Greening Sustainable Supply Chain Performance: The Moderating and Mediating Influence of Green Value Co-Creation and Green Innovation", *Administrative Sciences,* vol. 15, no. 5, pp. 183.

[25] Pebrianto, M., Yuliati, Y., Kustanti, A., Sukesi, K., Hidayat, K. & Kurniawati, E. 2024, "DEVELOPMENT STRATEGY TOWARDS A SELF-SUSTAINING VILLAGE BASED ON SDGs THROUGH THE TOURISM POTENTIAL OF SAMAR VILLAGE, PAGERWOJO DISTRICT", *Geo Journal of Tourism and Geosites, suppl.Supplement 4,* vol. 57, pp. 2123-2132.

[26] Pradhan, P., Subedi, D.R., Khatiwada, D., Kirti, K.J., Kafle, S., Raju, P.C., Dhakal, S., Ambika, P.G., Padma, P.K., Mainaly, J., Onta, S., Vishnu, P.P., Parajuly, K., Pokharel, S., Satyal, P., Singh, D.R., Talchabhadel, R., Tha, R., Thapa, B.R., Adhikari, K., Adhikari, S., Bastakoti, R.C., Bhandari, P., Bharati, S., Bhusal, Y.R., BK, M.B., Bogati, R., Kafle, S., Khadka, M., Nawa, R.K., Lal, A.C., Neupane, D., Neupane, K.R., Ojha, R., Narayan, P.R., Rupakheti, M., Sapkota, A., Sapkota, R., Sharma, M., Shrestha, G., Shrestha, I., Shrestha, K.B., Tandukar, S., Upadhyaya, S., Kropp, J. & Bhuju, D.R. 2021, "The COVID-19 Pandemic Not Only Poses Challenges, but Also Opens Opportunities for Sustainable Transformation", *Earth's Future,* vol. 9, no. 7.

[27] Prakash, O., Ahmad, A., Kumar, A., Chatterjee, R., Sharma, S., Alayi, R. & Monfared, H. 2022, "The compressive study of energy security prospects in India through solar power", *International Journal of Low-Carbon Technologies,* vol. 17, pp. 962-979.

[28] Qu, Y. & Li, H. 2024, "Analysis of School-Enterprise Cooperation Talent Cultivation Mode and Its Problems in Agricultural Colleges and Universities Involving Agriculture in the Era of Melting Media", *Applied Mathematics and Nonlinear Sciences,* vol. 9, no. 1.

[29] Rahmawati, N., Rahayu, L. & Hanifah, N. 2025, "Entrepreneurial character of rice farmers in the Bengawan Solo watershed", *IOP Conference Series.Earth and Environmental Science,* vol. 1518, no. 1, pp. 012018.

[30] Rajverma, A. 2024, "Impact of Ownership Structure and Dividends on Firm Risk and Market Liquidity", *Journal of Risk and Financial Management,* vol. 17, no. 7, pp. 262.