

Sustainable Entrepreneurship Ecosystems: A Multi-Stakeholder Framework for Developing Economies



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Abstract

Entrepreneurship for sustainability is now a key tool for tackling the economic, social and environmental issues of developing economies. The impact of entrepreneurial activities, however, is heavily reliant on the surrounding entrepreneurial ecosystem and various stakeholders' interactions. In this study, we attempted to investigate the factors that drive the sustainable entrepreneurship ecosystems and multi-stakeholder framework for developing economies. A quantitative research design was used by using secondary country level data which includes economic, institutional, social, technological and environmental indicators from developing economies. An Ecosystem Index for Sustainable Entrepreneurship (SEEI) was developed to measure the performance of the ecosystem, and statistical analysis such as descriptive statistics, correlation analysis, and regression analysis were used to determine important influence factors. Among the findings, digital connectivity, renewable energy use, institutional quality, women's legal empowerment and trade openness had positive impacts on the performance of the ecosystem, while poverty, environmental harm due to carbon consumption and high costs of business start-ups were significant impediments. The results also showed that the dimensions of economic, social, institutional and environmental are interdependent and constitute sustainable entrepreneurship ecosystems and not individual factors per se. The research results resulted in the proposal of a multi-stakeholder framework, which shows how the governments, financial institutions, communities, entrepreneurs, and sustainability-oriented actors can contribute to inclusive and resilient entrepreneurial development. The study will add to the Sustainable entrepreneurship and ecosystem literature by drawing empirical evidence from the developing economies and will help the policy makers in promoting entrepreneurship for Sustainable and inclusive economic growth.

Keywords: Sustainable entrepreneurship; Entrepreneurial ecosystems; Multi-stakeholder framework; Developing economies; Sustainable development.

1. Introduction

Entrepreneurship is increasingly recognized as the key mechanism that can help overcome global challenges of environmental degradation, social inequalities and inclusive economic development, and is now no longer a purely economic activity. Sustainable entrepreneurship has become a strategy that combines value creation and social and environmental goals, thus helping to meet its sustainable development goals and long-term well-being of society (Daou & Abdallah, 2026). In developing economies, where resource scarcity, institutional fragility, and socio-economic vulnerabilities are likely to be greater, the prospects of sustainable entrepreneurship to resilient and inclusive growth are potentially larger. Recent research has focused on the potential of sustainable entrepreneurship as a driver for innovation, environmental care, and socio-economic change with the support of the right ecosystem and the involvement of various stakeholders (Gideon et al., 2025; Roshid et al., 2025). Entrepreneurial ecosystems have become a popular topic to describe how various actors, institutions, and resources

interact, and shape the results for entrepreneurs. For this reason, while the individual entrepreneur is important, the ecosystem perspective also stresses the importance of networks of support that nurture opportunity recognition, innovation, venture creation and sustainability.

A sustainable entrepreneurial ecosystem adds this dimension by integrating environmental and social issues into entrepreneurial ecosystems' structures and processes. The degree of strength of these ecosystems is said to be linked to the quality of stakeholder relationships, cultural support mechanisms, institutional arrangements and collaborative learning environments that can facilitate sustainable value creation (Bischoff, 2021; Zhang, 2023). There is an increasing amount of literature explaining the need for multi-stakeholder collaboration to facilitate sustainable entrepreneurship. The entrepreneurial ecosystems are influenced by different resources, capabilities, and know-how possessed by different stakeholders such as governments, financial institutions, educational institutions, civil society groups, private companies, and local communities. Good

connections between these actors enable access to financial resources, transfer of knowledge, policy assistance, innovation dissemination and market opportunities. Multi-stakeholder engagement has thus come to be recognised as a basic prerequisite for solving complex sustainability issues and for the development of entrepreneurial solutions that can be both economically and socially beneficial (Eweje et al., 2021; Baranova, 2022; Baranova, 2024). This is especially true in developing and emerging economies, in which an entrepreneurial development is negatively affected by institutional gaps.

The theory behind sustainable entrepreneurship ecosystems can also be illustrated within the framework of Stakeholder Theory which states that the creation of value is not only dependent on the endeavors of individual firms, but on the interplay between multiple actors. Governments, financial institutions, universities, private enterprises, civil society organisations, local communities and environmental agencies all have a role to play in the entrepreneurial development from a sustainable entrepreneurship perspective, offering complementary resources, knowledge, legitimacy, and support mechanisms. Multi-stakeholder ecosystems open doors to finance, innovation, technology transfer, policy incentives, market opportunities and social capital, while increasing entrepreneurial resilience and sustainability outcomes. Entrepreneurial ecosystems with high stakeholder collaboration have been shown to have higher innovation capacity, inclusiveness and long-term sustainability performance compared to ecosystems with single actors. In developing economies with insufficient institutional support and limited resources, multi-stakeholder collaboration is an important strategy to tackle socio-economic and environmental problems and facilitate sustainable growth of entrepreneurship (Bischoff, 2021; Eweje et al., 2021; Zhang, 2023).

In these situations, collaborative ecosystem can fill in resource gaps and provide nurturing environments for entrepreneurial activity. Research in developing regions has shown that the cooperation among university, development institutions, private sector and government can have a powerful effect on the enhancement of entrepreneurial skills and the achievement of innovative results. In addition, multi-sectoral partnership has been proven to aid in sharing knowledge, improve institutions, and foster sustainable business development in various socio-economic contexts (Arslan et al., 2023; Biancone et al., 2022; Adewale et al., 2025). Sustainable entrepreneurial ecosystems are also very important to inclusive development as they facilitate innovation within the small businesses, rural communities and marginalised groups. The experiences of emerging economies indicate that collaborative platforms and stakeholder networks

can be used to foster entrepreneurial innovation and to meet social and economic development goals. These ecosystem-centric strategies facilitate a more collaborative sharing of resources, joint problem-solving, and co-creation of sustainable solutions, fostering greater resilience and long-term development achievements at the regional level (Barzola Iza et al., 2020; Mhlonyane & Mamabolo, 2024).

Besides stakeholder engagement, governance structures and institutional frameworks are still key factors to the success of sustainable entrepreneurial ecosystems. Multi-level governance mechanisms can help to coordinate the various actors and to connect entrepreneurship with overall sustainability agendas. Adopting an ecosystem approach to governance has been linked to better innovation performance, more community involvement and better sustainability results. Likewise, both corporate sustainability and stakeholder-centric development strategies are found significant as levers of sustainable entrepreneurial transformation, leading to the need of integrated and collaborative ecosystem approaches (Ciasullo et al., 2020; Singh & Rahman, 2021). There is still a lack of literature regarding sustainable entrepreneurship and thinking in terms of an ecosystem. Past research often looks at sustainability, entrepreneurship, institutional development and the collaboration between stakeholders as different phenomena and thus as a fragmented picture of how these four are interrelated in developing economies. Additionally, there is limited research that has suggested comprehensive frameworks to systematically integrate the economic, social and environmental and institutional dimensions in a multi-stakeholder ecosystem perspective.

While there has been a large body of research on sustainable entrepreneurship, entrepreneurial ecosystems, stakeholder collaboration and sustainability transitions, there are still a number of relevant gaps. First, a lot of research has been mainly focused on one of the four areas – entrepreneurship, sustainability, institutional development and stakeholder engagement – without considering the relationship between these areas in the context of an ecosystem. Second, the existing empirical research on sustainable entrepreneurship ecosystems are mainly focused in developed economies, and the research from developing economies is relatively scarce. Third, although the importance of stakeholder co-operation in entrepreneurial development is increasing, there is a need for more holistic approaches that include all elements of economics, society, institutions, technology and the environment, in a multi-stakeholder ecosystem perspective. Fourth, quantitative evidence is scarce in terms of the relative importance of these ecosystem dimensions for sustainable

entrepreneurship performance in the context of the developing economies.

This study aims to fill these gaps by creating a Sustainable Entrepreneurship Ecosystem Index (SEEI) using country-level indicators and analyzing the factors affecting the performance of sustainable entrepreneurship ecosystems in developing economies. Moreover, the study puts forward an all-inclusive multi-stakeholder framework which presents the role of all stakeholders including

government, financial institutions, educational institutions, communities, entrepreneurs and sustainability-oriented organizations, in reaching sustainable entrepreneurial development. This study provides new empirical and theoretical insights to the sustainable entrepreneurship literature by considering multiple dimensions of the ecosystem in a single analysis and provides practical guidelines for policy makers and development practitioners.

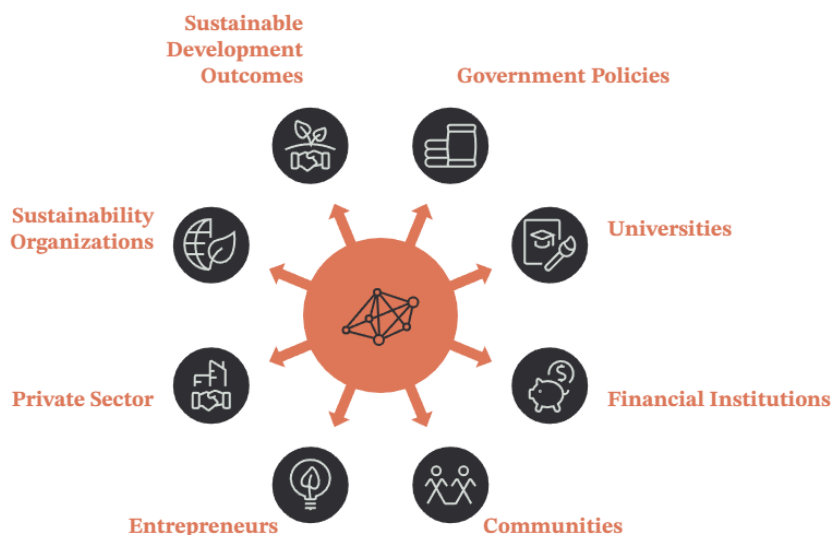


Figure 1. Sustainable Entrepreneurship Ecosystems in Developing Economies

The proposed multi-stakeholder framework for sustainable entrepreneurship ecosystems in developing economies is as shown in figure 1. Entrepreneurs and their relationships with governments, universities, financial institutions, communities, private sector organizations and sustainability-oriented institutions are central to the framework. These stakeholders, who work in collaboration, in resource sharing and policy support, collectively contribute to innovation, inclusiveness, environmental sustainability and sustainable development outcomes in the long-term.

Research Objectives

1. To identify the key economic, social, environmental, and institutional factors that contribute to the development of sustainable entrepreneurship ecosystems in developing economies.
2. To examine the role of multi-stakeholder collaboration in fostering sustainable entrepreneurial activities and enhancing ecosystem performance.
3. To develop a comprehensive multi-stakeholder framework that supports sustainable entrepreneurship and inclusive economic development in developing economies.

2. Methodology

2.1 Research Design

In this study, a quantitative research design was used to explore the factors that facilitated the sustainable entrepreneurship ecosystems in developing economies. The study was formulated as a secondary data-based empirical study due to the requirement of the research objective that necessitated macro level economic, institutional, social and environmental indicators to be analyzed across countries. A cross-country analytical approach was deemed to be suitable as sustainable entrepreneurship ecosystems were influenced by entrepreneurial activity of the firms but also by the broader national environment in terms of institutional quality, infrastructure, environmental performance, financial inclusion, and socio-economic development.

2.2 Data Source and Sample

Secondary data was obtained from a country-level development dataset with economic, social, institutional, technological and environmental indicators (TrueCue, 2021). Observations were made in countries and years, enabling the study of ecosystem-level conditions pertinent for entrepreneurship and sustainability. The data included indicators on GDP, GDP per capita, trade openness, inflation, gross savings, renewable energy consumption, renewable electricity output, carbon

emissions, natural resource depletion, forest depletion, poverty, education, internet usage, mobile connectivity, women's legal rights, costs of starting a business and government expenditure. To keep the sample consistent with the focus of the article, developing economies have been chosen. The countries were classified as developing economies based on the income classification and regional development status provided in the data set. To enhance the reliability of the empirical results, the observations with incomplete records, but not too many missing values, were kept and observations with insufficient information about the selected variables were eliminated.

2.3 Variable Selection and Measurement

The variables were chosen based on their theoretical relevance to entrepreneurial ecosystems for sustainable entrepreneurship. The development environment where entrepreneurial activities occurred was captured by economic indicators. The factors were GDP per capita, trade openness, inflation, gross saving and national income related measures. The policy and regulatory environment to support or hinder entrepreneurship was captured in institutional indicators. These were business start-up cost indicators, government expenditure, regime related variables, and Women, Business and the Law Index. Social and technological indicators were added as sustainable entrepreneurship ecosystems would need to have inclusive access to human capital, digital infrastructure, and basic development conditions. These indicators comprised of education-specific indicators, poverty indicators, internet coverage, mobile network coverage, availability of drinking water and financial inclusion indicators including ATMs. There were also indicators for environment sustainability to illustrate the green and sustainability orientation of the ecosystem. These encompassed renewable energy consumption, renewable electricity generation, carbon emissions, natural resource depletion, forest depletion, carbon damage and adjusted net savings.

2.4 Construction of the Sustainable Entrepreneurship Ecosystem Index

An index of Sustainable Entrepreneurship Ecosystem was created to capture the overall strength of the sustainable entrepreneurship environment in developing economies. The index is the result of the combination of selected economic, institutional, social, technological and environmental indicators. Prior to index construction, each variable had missing values, outliers and scale differences checked. The variables were normalized because they were measured in different units so that they are brought onto a comparable scale. Positive indicators, including renewable energy consumption, internet usage, financial inclusion, GDP per capita and women's

legal rights, were normalized, for which higher values meant better performance of the ecosystems. Negative indicators (carbon emissions, poverty, inflation, start-up costs, natural resource depletion, forest depletion) were reverse coded prior to normalization to ensure that a higher normalized score always meant that the conditions were more favourable. The indicators were then normalised and combined into a composite index to show the sustainable entrepreneurship ecosystem performance of each country-year observation.

2.5 Data Analysis Procedure

Analysis of the data was done in multiple stages. In the first step, descriptive statistics were applied to tabulate the key features of the data set such as the mean, standard deviation, minimum and maximum values of the indicators selected. This step gave an insight on how economic, social, institutional and environmental conditions were distributed in the developing economies. Secondly, correlation analysis was conducted to investigate the relationships between the selected indicators. This allowed for the identification of potential relationships among sustainability performance, institutional quality, economic development and entrepreneurship-related conditions. Third, the data were reduced and identified the key underlying dimensions of sustainable entrepreneurship ecosystems by employing a third data reduction technique, namely principal component analysis. This procedure was used to identify if the variables chosen grouped into meaningful ecosystem dimensions including economic capacity, institutional support, social inclusion, technological readiness and environmental sustainability. Finally, regression analysis was done to examine the effect of the various economic, institutional, social, technological and environmental factors on the Sustainable Entrepreneurship Ecosystem Index. The regression model was employed to determine the most important factors affecting the ecosystem in the developing economies.

2.6 Ethical Considerations

This study involved only aggregated country-level data that were publicly available and secondary, with no human participants or personally identifiable information. So, there was no need for formal ethical approval. At the same time, the study has been conducted in an academic manner with the use of the collected data solely for research purposes and the analytical procedures clearly declared.

3. Results

3.1 Dataset Profile

The data consisted of 3,287 observations, 54 variables, and included 173 countries for the years 2000 to 2018. The high-income observations were not considered as the article concerned developing

economies. The number of observations in the final analytical sample was 138 developing economies and 2,386 observations. Africa and Asia were the largest segments of the developing-economy

sample, as seen in Table 1. The dataset was dominated by observations from Africa and Asia, as shown in Figure 2.

Table 1. Sample distribution by continent

Continent	Countries	Observations	Mean years per country
Africa	47	880	18.7
Asia	37	638	17.2
North America	18	302	16.8
Europe	20	278	13.9
South America	12	212	17.7
Oceania	4	76	19.0

Source: Authors' calculations based on the World Sustainability Dataset.

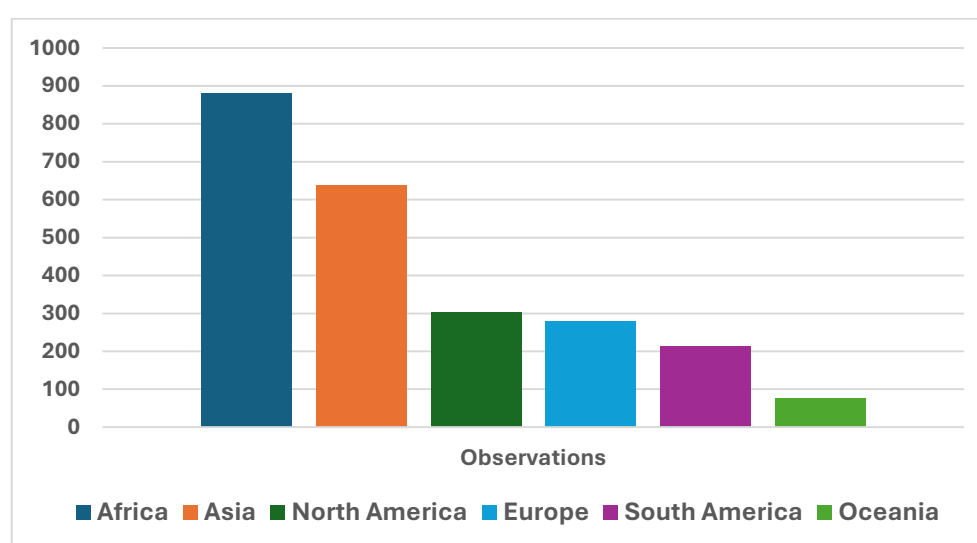


Figure 2: Distribution of Observations Across Continents in the Developing-Economy Sample

3.2 Descriptive Statistics of Key Indicators

Descriptive statistics indicated significant differences between the different economic, social, institutional, technological and environmental indicators selected. There was large variation in the GDP per capita in developing economies as displayed in Table 2, meaning that the ability to generate incomes was highly varied.

Table 2. Descriptive statistics of selected variables

Variable	N	Mean	SD	Min	Max	Missing %
GDP per capita	2,345	3,497.60	3,281.43	90.53	16,422.11	1.72
Trade (% GDP)	2,231	78.64	36.52	0.17	311.35	6.50
Start-up cost, female	1,806	64.01	128.36	0.10	1,540.20	24.31
Women Business and Law Index	2,348	65.89	15.26	23.75	97.50	1.59
Internet users (%)	2,136	20.06	20.29	0.00	81.20	10.48
3G coverage (%)	862	63.18	33.05	0.00	100.00	63.87
Renewable electricity (%)	2,029	36.69	34.84	0.00	100.00	14.96
Renewable energy consumption (%)	2,386	39.99	30.64	0.00	98.34	0.00
CO ₂ damage (% GNI)	2,328	1.97	2.17	0.09	27.10	2.43
Poverty (%)	814	11.74	17.63	0.00	94.30	65.88
Basic drinking water (%)	1,144	88.93	12.58	26.00	100.00	52.05
Life expectancy	2,234	66.86	8.54	40.37	80.10	6.37

Source: Authors' calculations based on the World Sustainability Dataset.

3.3 Sustainable Entrepreneurship Ecosystem Index Results

The Sustainable Entrepreneurship Ecosystem Index (SEEI) was created to provide an overall assessment of ecosystem performance across economic, institutional, social, technological and environmental aspects. The

average scores for each environmental sustainability dimension, as seen in Table 3, showed that environmental sustainability received the highest average score while economic capacity received the lowest average score. Environmental sustainability achieved the highest average score among the ecosystem dimensions Figure 3.

Table 3. Dimension-wise ecosystem scores

Dimension	N	Mean	SD	Min	Max
Economic capacity score	2,352	34.04	9.78	0.00	87.87
Institutional support score	2,367	59.91	18.08	1.27	100.00
Social inclusion/technology score	2,317	54.61	22.66	0.00	100.00
Environmental sustainability score	2,386	66.96	14.31	0.00	99.61
Overall SEEI	2,386	53.78	9.76	18.12	76.50

Source: Authors' calculations based on the World Sustainability Dataset.

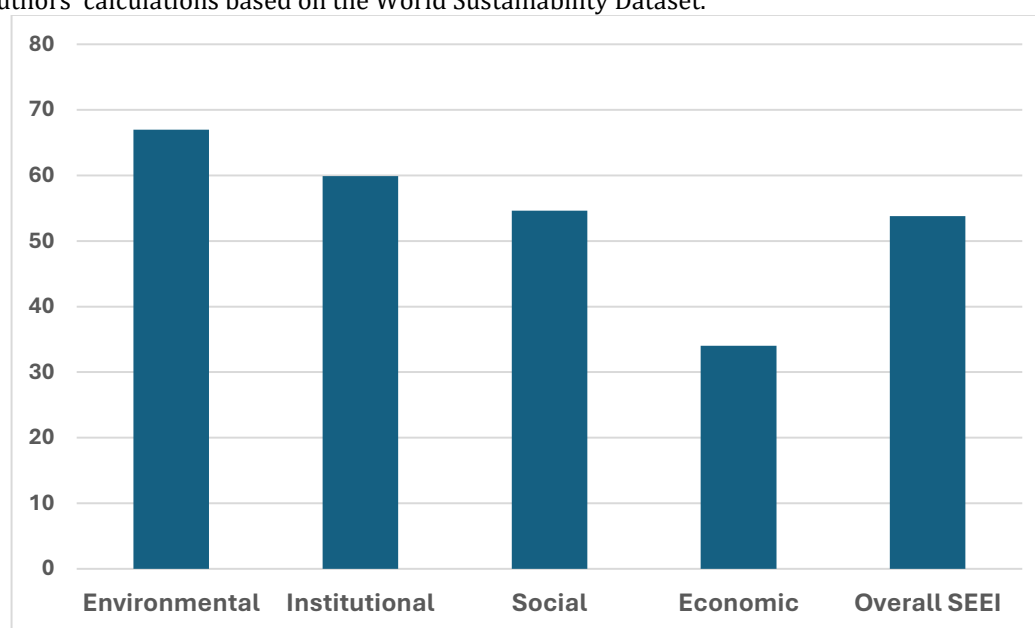


Figure 3: Average Scores of Sustainable Entrepreneurship Ecosystem Dimensions

3.4 Income Group Comparison

The results showed there are significant differences between the levels of sustainable entrepreneurship ecosystem performance across income groups. The overall score for the economies with upper middle-

income was the highest and for the low-income economies was the lowest, as shown in Table 4. Upper-middle-income economies exhibited the strongest ecosystem performance Figure 4.

Table 4. SEEI scores by income classification.

Income group	Countries	Observations	SEEI	Economic	Institutional	Social	Environmental
Upper-middle income	71	765	60.30	37.28	68.45	71.65	64.24
Lower-middle income	83	868	55.18	35.27	61.64	59.25	64.80
Low income	59	753	45.53	29.17	48.97	31.13	72.20

Source: Authors' calculations based on the World Sustainability Dataset.

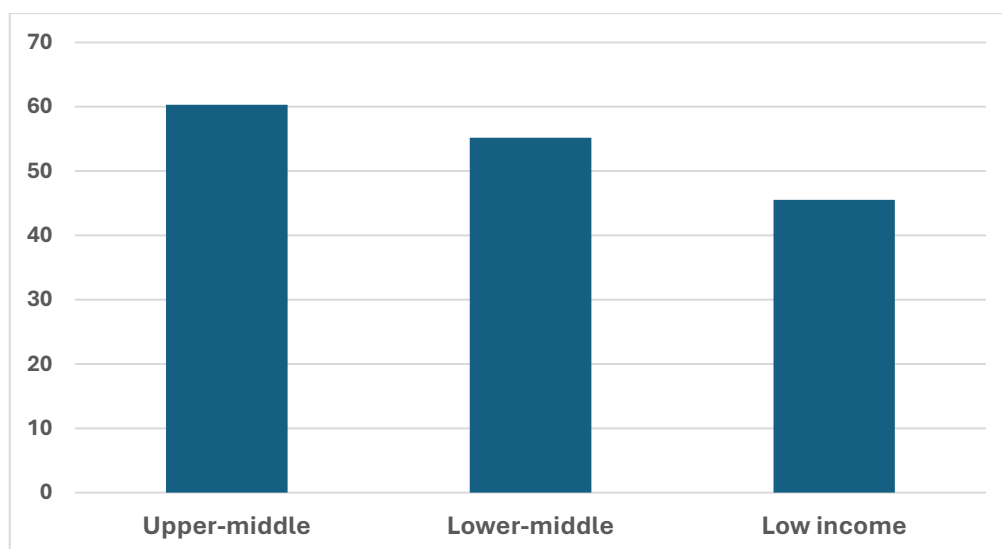


Figure 4: Comparison of Sustainable Entrepreneurship Ecosystem Index (SEEI) Scores by Income Group

3.5 Regional Ecosystem Performance

The results showed that there are significant differences between regions in terms of the performance of sustainable entrepreneurship ecosystems. Table 5 reveals that Europe and Northern America countries had the highest average ecosystem score in the sample of developing economies, and Sub-Saharan Africa had the lowest average scores. Economically and socially less-developed Sub-Saharan Africa had a relatively high score on environmental sustainability indicators.

Table 5. SEEI scores by UN SDG world region

Region	Countries	Observations	SEEI	Economic	Institutional	Social	Environmental
Europe and Northern America	20	278	60.18	35.50	70.45	75.15	60.21
Latin America and Caribbean	30	514	58.54	33.26	64.96	66.93	69.41
Oceania	4	76	56.03	35.24	65.11	55.04	68.97
Eastern and South-Eastern Asia	13	227	53.97	40.40	58.07	56.75	63.46
Northern Africa and Western Asia	16	259	53.70	36.11	57.85	68.26	53.25
Central and Southern Asia	12	228	53.40	33.47	54.25	58.07	68.15
Sub-Saharan Africa	43	804	48.38	31.76	55.30	33.20	72.60

Source: Authors' calculations based on the World Sustainability Dataset.

3.6 Correlation Results

The correlation analysis revealed some statistically significant relationships between Sustainable Entrepreneurship Ecosystem Index and the explanatory variables chosen for the analysis. As seen from the result in Table 6, SEEI had strong positive relations with the use of internet, institutional quality and economic development variables.

Table 6. Correlation matrix

Variable	SEEI	GDP pc	Start-up cost	WBL	Internet	Renewable energy	CO ₂ damage	Poverty
SEEI	1.00	0.55	-0.62	0.55	0.71	-0.36	-0.08	-0.65
GDP pc	0.55	1.00	-0.32	0.29	0.70	-0.57	-0.02	-0.51
Start-up cost	-0.62	-0.32	1.00	-0.23	-0.35	0.41	-0.18	0.52
WBL	0.55	0.29	-0.23	1.00	0.39	-0.08	0.02	-0.30
Internet	0.71	0.70	-0.35	0.39	1.00	-0.49	0.05	-0.51
Renewable energy	-0.36	-0.57	0.41	-0.08	-0.49	1.00	-0.42	0.72
CO ₂ damage	-0.08	-0.02	-0.18	0.02	0.05	-0.42	1.00	-0.10
Poverty	-0.65	-0.51	0.52	-0.30	-0.51	0.72	-0.10	

Source: Authors' calculations based on the World Sustainability Dataset.

4. Discussion

This study claims that the scale of sustainable entrepreneurship ecosystems in developing economies is multi-dimensional and that economic, institutional, social, technological and environmental factors all contribute to the performance of the ecosystem. The positive relation between institutional quality, digital connectivity, renewable energy utilization and ecosystem performance indicate that sustainable entrepreneurship is not only determined by the entrepreneurial skills of an individual, but also highly relies on the environment of the ecosystem. The results strengthen the rationale for the need for a coordinated stakeholder engagement and a knowledge-sharing mechanism to support sustainable entrepreneurial development through innovation, resilience, and long-term value creation. This kind of ecosystem dynamics are aligned with new thinking on the importance of collaborative networks as a key enabler for inclusive and sustainable entrepreneurship (Nikina-Ruohonen, 2021).

This highlights the significance of governance structures in the context of sustainable entrepreneurship, as reflected by the strong performance of institutional indicators, such as legal and regulatory support mechanisms. Nations with higher institutional contexts recorded higher scores in their ecosystems, indicating that good governance can help lower the hurdles for entrepreneurship and at the same time facilitate sustainability goals. This discovery confirms the hypothesis that a coordinated governance system is necessary in entrepreneurial ecosystems to connect the economy with the environment and society. Other studies have come to the same conclusion regarding the importance of strategic governance systems to promote sustainable entrepreneurial development in emerging economies (Lakhwani, 2025). Furthermore, the importance of institutional support emphasizes the role of public policy interventions and collaborative governance approaches in influencing entrepreneurship outcomes (Momen, 2021). The positive influence of internet penetration and social inclusion indicators further highlight how important are accessible infrastructure and human development indicators in sustainable entrepreneurship ecosystems. Digital connectivity opens up markets, information, financial services, and innovation networks for entrepreneurs, which helps to improve the functionality of the ecosystem. These findings indicate that technological inclusion is an enabling tool to bind various actors in the ecosystem together and enable them to value create in a cooperative way. The results also reflect research showing that co-creation and collaboration among various stakeholders can greatly improve the effectiveness of an entrepreneurial ecosystem by optimizing

resources and improving access to networks (Munzila & Wardiyanto, 2026). Environmental sustainability was also identified as a key aspect of ecosystem functioning. The positive effects of renewable energy use and negative effects of carbon-related damages are a sign of entrepreneurial ecosystems that are supported by environmentally sustainable development. This discovery builds on the emerging understanding that sustainability transitions must be supported by ecosystem level governance and co-operation between governments, businesses, communities and innovation actors. Multi-stakeholder ecosystems are increasingly recognized as crucial mechanisms to drive sustainability-oriented transformations and to balance economic growth and environmental commitments (Bonilla et al., 2023; Velter et al., 2022).

The findings thus offer empirical evidence for the need for embedding environment in entrepreneurship ecosystem concepts. It was also found that poverty and the cost of business startups were very restrictive to ecosystem development. Such results indicate that sustainable entrepreneurship is not possible in situations of social-economical exclusion and lack of entrepreneurial opportunities. Therefore, inclusive policies that tackle structural inequalities and open access to resources for underrepresented groups should be a priority in ecosystem development strategies. This aligns with studies that highlight the need to ensure empowerment-based stakeholder networks and women-driven entrepreneurial partnerships to achieve sustainable and equitable entrepreneurial growth (Beta & Ogunmokun, 2026; Bvochoraa & Galavotti, 2026). In the same way, other evidence has pointed to how entrepreneurship can contribute to the pursuit of other sustainable development goals, through inclusive participation and collaboration (Dambudzo Bvochora & Galavotti, 2026).

A significant result is the necessity of integration among the different stakeholders from various sectors. The empirical findings show that the performance of the ecosystem is best when its economic, social, institutional, and environmental aspects are complementary to each other. This observation aligns well with the perspectives on sustainability leadership that promote the idea of inclusive stakeholder engagement and shared responsibility for sustainable development outcomes (Jayashree et al., 2022). Moreover, the results highlight the potential of values-based communication between different stakeholder groups to enable change within organizations and society to achieve sustainability goals (Sebhatu & Enquist, 2022). The findings indicate that a conducive policy environment for sustainable entrepreneurship requires the concerted efforts of governments, development agencies, financial

institutions, educational institutions, and the private sector. This is of course significant in developing economies where gaps in institutions and shortage of resources present serious constraints to entrepreneurship. The emerging ecosystem trends align with findings from successful collaborative ecosystem design projects, where resilience, inclusion, and stakeholder collaboration were identified as factors of successful entrepreneurship (Nkontwana et al., 2025).

In the same way, sectoral studies have shown that the participation of various stakeholders in governing the ecosystems and long-term planning enhances the sustainable development outcomes (Salman et al., 2024; Mohamadi, 2026). In general, the results indicate the multi-stakeholder framework by showing that sustainable entrepreneurship ecosystems are a result of the coordinated relationship between institutions, communities, markets, technology systems, and actors who are sustainability oriented. The study, therefore, contributes to the literature which calls for an ecosystem-based approach to entrepreneurship and offers empirical evidence on the need for collaborative stakeholder engagement on multiple dimensions for sustainable entrepreneurial development in developing economies.

5. Conclusion

In this study, the sustainable entrepreneurship ecosystems from a multi-stakeholder perspective on developing economies have been explored. The results revealed that the economy capacity, institutional support, social inclusion, technological access, and environmental sustainability all contributed to determining ecosystem performance. Results showed that digital connectivity, women legal rights, renewable energy usage and trade openness positively supported sustainable entrepreneurship ecosystems, and poverty, carbon damages and high business start-up costs demonstrated to negatively impact ecosystem development. The study contributes to the sustainable entrepreneurship literature by noting that entrepreneurship in a developing economy should not be considered merely as an individual or firm level activity. Rather, it should be seen as the result of a process of coordinated action on the part of governments, financial institutions, communities, entrepreneurs, sustainability agencies and market actors. The proposed framework emphasizes the role of institutional quality, inclusive policies, green infrastructure, and collaboration among stakeholders to foster sustainable growth of entrepreneurship. The policy implications from the findings imply that developing economies need to focus on the following policy areas: business-enabling reforms, digital infrastructure, investments in renewable energy, gender-inclusive legal system and poverty reduction. Such interventions may boost

entrepreneurial involvement and further promote general sustainability efforts. The study had the drawbacks of using secondary macro level data and proxy indicators. Future studies should include firm-level data and qualitative insights from the stakeholders along with longitudinal case studies for further validation of the proposed framework. The research offers a valuable starting point to comprehend resilient, inclusive, and sustainability-focused entrepreneurship ecosystems in developing economies.

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