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Green Transition and Environmental Uncertainty: Implications for Entrepreneurial Ecosystems and Human Resource Capabilities

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Abstract: This paper will seek to investigate how green transition and perceived environmental uncertainty influence the innovation ecosystem through the Resource-Based View (RBV) theory. It explains how green transition can help organizations to create valuable, rare and sustainable resources that facilitate innovation, while perceived uncertainty of the environment can result in instability that could impede the development of ecosystems of innovation. The information will be gathered through a structured questionnaire among workers in various organizations, using convenience sampling to target about 300 respondents. SPSS will be used to analyse the data by performing reliability analysis and regression analysis to test how effective green transition and perceived environmental uncertainty are on the innovation ecosystem. Based on the anticipated results, a positive impact of green transition on innovation ecosystem is expected through sustainable practices, technological development, and collaborative innovation. Perceived environmental uncertainty is assumed to impact negatively on the ecosystem of innovation because uncertainty scares away long-term investment, coordination, and innovative actions between organizations. The research will be relevant to RBV theory by focusing on green transition as an organizational resource that supports innovation, whereas environmental uncertainty undermines the efficient use of resources. In practice, the study can inform managers and policymakers on how environmental innovation can be reinforced by taking up green initiatives and addressing environmental uncertainty. However, the cross-sectional design, self-reported information, and convenience sampling may limit generalization. Future research incorporating longitudinal designs or various industries can improve robustness.

Keywords: Green Transition, Environmental Uncertainty, Entrepreneurial Ecosystems, Human Resource Capabilities

Introduction

The issue of climate change, environmental degradation, and stringent regulations requirements have compelled various organizations to undertake environmentally sustainable initiatives in the world over the past few years (Dent et al., 2025). The idea of green transition, corresponding to the implementation of green technologies, sustainable process and green policies in organizations, has also been viewed as a relatively new contributor to organizational change and growth (Khan et al., 2021; Zhou & Li, 2024; Nana et al., 2026)). Green transition is no longer considered as a cost, but rather as a long-term competitive strategy and innovation. Beside the sustainability pressures, organizations operate in a highly dynamic and unpredictable

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environments, which is fast changing technology, volatile markets, and complexity in regulations. This state of affairs can be defined as perceived environmental uncertainty, and it is a factor that affects the managerial decision-making and organizational innovation behaviour (Hu et al.,2024). Uncertainty is usually a deterrent to innovation and collaboration between stakeholders (Chaudhuri et al., 2023).

A network of interconnected organizations, institutions, suppliers, customers, and policy makers that produce and share innovation together is termed as an innovation ecosystem (Zhou and Li,2024). The high standing within an innovation ecosystem facilitates the exchange of knowledge, merging of resources, and long-term innovation results. Based on the theory of Resource-Based View (Shrestha et al., 2025), this research will posit that green transition is an organizational resource which is valuable and scarce and enhances the ecosystems of innovation, whereas the perceived environmental uncertainty undermines the effective usage of the mentioned resources (Shatila et al., 2025).

Sustainable development has become a central strategic focus of organizations due to the anxieties caused by the environmental view and the growing awareness of the stakeholders(Marquardt & Harima, 2024). In this regard, the national governments and international bodies have introduced different policies to convince the firms to decrease carbon emission, maintain energy efficiency (Napoli et al., 2025), and implement green technologies. As a result, organisations are identified to be undertaking more green transition projects including the use of renewable sources of energy, minimizing waste, green innovation, and green supply chains (Kiefer et al., 2021). Past literature has reported that green transition improves innovation through the establishment of new products, processes and business models that are aligned with the goals of environmental sustainability. The strategy based on the RBV viewpoint, the strategic resources that are valuable, rare, and hard to duplicate are green capabilities, environmental knowledge, and sustainability-oriented culture, which, consequently, improves innovation ecosystem (Hu et al., 2025).

Conversely, the aspect of high environmental uncertainty is also faced by organizations in the form of changes in regulations, technological incongruities and uncertainty in market demands. It has been reported in the literature that with the perceived environmental uncertainty high, there is risk-averse behaviour, less collaboration, and slower innovation investments (Hu et al., 2024). These circumstances may lead to negative implications on the formation of the innovation ecosystems via Green Transition and environmental uncertainty has been examined individually, yet only a small number of research has examined their interplay on innovation ecosystems through the RBV theory particularly in the context of developing economies (Guerrero & Siegel, 2024). This gap in the literature will be addressed through the current study, as both of the concepts will be combined into a single framework.

Research Gap

Regardless of the new trend that has been emerging in the recent years regarding green innovation and sustainability, there are some gaps in terms of the literature review. To begin with, even though previous research has focused on the integration of firm-level green innovation, little attention has been paid to date to the innovation ecosystem perspective (Zhou and Li, 2024). Second, contextual factors such as perceived environmental uncertainty have not been given the attention that it deserves in influencing innovation ecosystem, (Hu et al., 2024). Third, empirical studies that combine both green transition and environmental uncertainty in the RBV framework in the emerging and developing countries are limited. The study will therefore fill those gaps by concentrating on empirical analysis of the role of green transition and perceived environmental uncertainty in innovation ecosystem regarding the RBV theory (Dzimba & van der Poll, 2024).

Problem Statement

Although more organizations have been keen on adopting the sustainability concept, organizations have been facing challenges on how the approach of green transition can be incorporated into their innovation processes (Mensah et al., 2025). Though green transition plan can be incorporated into their process of innovation. Despite the potential of green transition to enhance creativity, cooperation and technological growth,

organizations have been plagued with successful adoption and implementation of the concept of sustainability especially because of the complexities involved, and implementation of sustainability principles, especially because of the complexities involved in their environments (Wiredu et al., 2025). Also, it is believed that uncertainty is linked with the operating environments within organizations including uncertainty linked with shifting markets, legislation, and technology (Jin et al., 2021). This can become an obstacle to the success of strategic decisions and adoption of innovations, which in turn prevents the beneficial results of green transitions with the innovation ecosystem (Li & Zhang,2024)

The past studies have traditionally investigated the impact of either green transition or environmental uncertainty with the consequences of innovation (Chen et al., 2022; Sampene et al., 2024). However thus far, the literature on both factors and their impact on the overall innovation environment has been minimal especially in the developing countries where firms are challenged with unique issues in adhering to rules and regulations and encountering high levels of market and technological uncertainty. In the case of the companies, organizations who desire to instigate sustainable innovation in their organizations, and in view of the fact that emerging markets are being aided technologically economically to enhance sustainable growth in the developing countries, there has become a pressing need to offer both theoretical and practical help regarding the two aspects in ensuring that companies can deal with uncertainty effectively and enhance their innovation capacity (Wiredu et al., 2025).

The present work is founded on the Resource-Based View (RBV) of the company that outlines that the foundation of competitiveness of the organization lies in the acquisition and use of special resources and competencies that are valuable, rare, imitable, and non-substitutable (Barney, 1991). It is possible to identify within the frames of the current work green transitional initiatives and the ability to operate under environmental uncertainty as the strategic resources enhancing the innovation environment of the organization.

Justification of the Study

This research will be theoretically and practically motivated. This research in theory builds upon the RBV conceptualizing process transition as a strategic organizational resource that improves innovation ecosystems (Khan et al., 2021). In addition, he sees perceived environmental uncertainty as a limitation to successful resource use. The Study practically educates managers and policymakers about the fact that, due to uncertainty management, the investment in green transition initiatives may contribute to more successful innovation ecosystems. These are very applicable to the organizations that work in the volatile and competitive environment.

Research Questions

- What are the impacts of green transition on the innovation ecosystem?
- What impact does perceived environmental uncertainty have on the innovation ecosystem?
- In general, how does RBV theory explain the relationship between green transition, perceived environmental uncertainty, and the innovation ecosystem?

Research Objective

The purposes of this study are:

- This paper tries to analyse and discuss the influence of green transition on the innovation ecosystem
- To analyse the effect of perceived environmental uncertainty on the innovation ecosystem.
- To explain, using RBV theory, the role of green transition as a strategic resource.

Significance of the Study

The paper is added to the current literature on sustainability and innovation as the green transition and environmental uncertainty were integrated into the RBV Framework. It has equally given practical advice to

managers on how to cultivate the innovation ecosystem, through green strategy and good uncertainty management practices (Zhou & Li, 2024). In addition, one of the hints relates to formulating the supportive environmental and innovation policy designs; the independent ones are green transition and perceived environmental uncertainty, and the dependent one is an innovation ecosystem. The study uses the cross-sectional design and explains the results of the study in the context of the RBV of different organizations; the independent variables are the variable of green transition and the perceived environmental uncertainty, and the dependent variable is an innovation ecosystems. The proposed research is based on the cross-sectional design and its results are interpreted in the framework of the RBV. The industry-specific and longitudinal effects are not researched because of the time and resource limitations.

Literature Review

Green Transition

Green transition may also be described as the change and transformation of organization to more environmentally friendly practices, including uptaking green technology, environmentally friendly processes, renewable power, and environmentally friendly resource utilization (Khan et al., 2021; Qin, 2026). Green transition has been the topic of significant concern in organizations worldwide in the recent times because of the environmental concerns and investor and other stakeholder requirements. Greens transitions implemented by organizations do not only revolve around sustainable environmental practices, but also seek to enhance competitiveness (Roundy & Burke-Smalley, 2022).

The empirical evidences have shown that the green transition creates innovation in the meaning, it stimulates firms to develop new products, processes, and business models that can be aligned with environmental goals (Kiefer et al., 2021). On a strategic level, green transition enables organizations to acquire unique skills in the guise of green knowledge, eco-innovation situation, and environmental management capacity. Resource-Based View (RBV) of the firm suggests that these capabilities are critical and rare and that they help the firm to create sustained competitive advantage (Barney,1991; Zheng et al., 2024).But recent Studies indicate that organizations that are participating in the process of green transition will be more inclined to interact with external parties such as suppliers, research organizations and the government, thereby improving the environment of innovation (Zhou & Li, 2024). Accordingly, green transition is becoming a driver of innovation acceptable and is no longer an obstacle (Mujiatun et al., 2025).

Perceived Environmental Uncertainty

It is the perceptions of managers towards uncertainty and changeability of external business environment like market demand, changes in technology and government control (Hu et al., 2024). The business environment is uncertain, which could lead to failure of organizations to foresee the future. Based on the literature in place, it is stated that environmental uncertainty has a negative impact on innovative activities. This is because it heightens the risk aversion and reduces long-run investment in research and development activities. Also, in case an organization is confronted with a scenario in which an organization is in an uncertain environment, then the organization can be risk-averse. This will decrease the collaboration of the organization and external organizations in the innovation activities that may hinder the process of establishing innovation ecosystems. Nevertheless, certain studies provide the view that reasonable levels of uncertainty may positively affect innovation and may require business to seek new avenues to become innovative and adapt to new conditions. However, excessive distribution may imbalance the coordination and trust within the ecosystem, which impedes innovation ecosystem development (Zhou & Li, 2024; Kariv et al., 2025)

Innovation Ecosystem

Innovation ecosystem refers to an organizational network that links institutions and stakeholders to create and exchange innovative ideas (Zhou & Li, 2024). Innovation ecosystems emphasize the strength of collaboration and connectedness as opposed to the conventional innovation paradigm which emphasizes

collaboration between organizations and innovation in organizations. A productive innovation ecosystem assists organizations to get access to complementary resources thus enabling lower innovation expenses and faster technological development. The relevance of sustainability-oriented innovation ecosystems to alleviate immediate climate concerns towards green growth has particularly been emphasized in recent literature (Kiefer et al., 2021). The Efficacy of innovation ecosystems depends on the ability to use the available strategic resources and the stability of the external environment. Therefore, green transition and external environmental uncertainty play a critical role in the process of innovation ecosystem, evolution.

Green Transition and Innovation Ecosystem

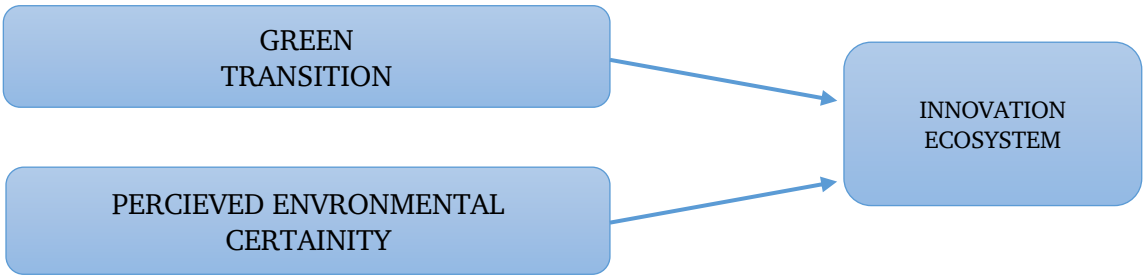
Some of the studies have revealed that there is positive correlation on green transitions and innovation results. The practices that are supportive to the environment encourage investments in eco-innovations and innovation collaborations within organizations (Khan et al., 2021). This in turn results in the creation of innovation ecosystems. Green transition in RBV opens up precious organizational resources at the environmental knowledge, environmental innovations and others which translates to improved performance of innovation within the ecosystem level. Recent Research Confirms that those strategies that are in line with green will result in favorable consequences of collaborative innovation and ecosystem resilience (Zhou an&d Li, 2024)

Perceived Environmental Uncertainty and Innovation Ecosystem

Quite on the contrary, it is widely thought that the environmental uncertainty perception has negative correlations with the outcome of innovation. Under the condition of high environmental uncertainty, it inhibits the willingness of the organizations to share knowledge with one another, invest in joint projects, and devote real resources to the innovation processes (Hu et al., 2024). The literature uncertainty may interfere with effective utilization of resources in an organization and hence impede the success of green transition initiatives. Therefore, it is important to deal with environmental uncertainty to facilitate the growth of innovation ecosystems.

Conceptual Framework

Figure 1



Hypothesis

H1: Green transition has a positive and significant impact on the innovation ecosystem.

H2: Perceived environmental uncertainty has a negative and significant effect on the innovation ecosystem.

Theory Alignment: Resource-Based View (RBV)

The Resource-based view (RBV) theory states that sustainable competitive advantage of organizations is due to accumulation and exploitation of valuable, rare, imitable and non substitutable resources (VRIN) (Barney,1991). In this study, green transition is the strategic asset that enhances ecosystem and innovation.

Summary

Nevertheless, it is perceived environmental uncertainty that moderates the effectiveness of utilizing the stated resources above. Therefore, the RBV theory provides valuable explanations to learn how green transitioning

and environmental uncertainty interact to affect the innovation ecosystem. 2.5 The chapter has considered the literature that concerns green transitioning, environmental uncertainty, and innovation ecosystem. The chapter has particularly highlighted that the green transition factors that have a positive impact on the innovation ecosystems include the same but the environmental uncertainty is discussed as an impediment. The chapter hypothesizes conceptual frameworks on the premises of the RBV theory to test the proposed hypothesized relationships.

Research Methodology

Introduction

This chapter explains the research approach that was used to investigate the effects of green transition and perceived environmental uncertainty on the innovation ecosystem. It gives the description of the research design, variables, sampling, methods of data collection, and methods of analysis of data in the research. The research objectives and hypothesis are similar to the methodology approach to provide validity and reliability of the results.

Operationalization of Variables

This study consists of three main variable

Green Tansition (Independent Variable): Green transition is the degree to which organizations are environmentally sustainable, practicing green technologies, and processes that are environmentally friendly. It is assessed with the help of multiple items that are modified based on earlier studies dedicated to the issue of green innovation and sustainability practices (Khan et al., 2021).

Perceived Environmental Uncertainty (Independent Variable): Perceived environmental uncertainty is the perception of employees to the uncertainty in the external business environment on the part of employees in terms of changes in regulations, market volatility as well as technological uncertainty. The items of measurement are based on literature about environmental uncertainty existing in the literature (Hu et al., 2024).

Innovation Ecosystem (Dependent Variable): Innovation ecosystem is the degree of collaboration, sharing of knowledge and support of innovation within organizations and other stakeholders. It is quantified on the basis of the collaborative innovation, ecosystem support, and innovation networks items (Zhou & Li, 2024). The measurement of all the variables is a five point Likert scale between 1 = Strongly Disagree to 5 = Strongly Agree.

Approach to Theory development

This narrative has a deductive method of theory building. According to the theory of the Resource-Based View (RBV) and previous empirical research, the hypotheses are formulated and confirmed on the basis of quantitative data. The theory offers this theoretical framework on the nature of green transition as a strategic organizational resource and the perceived environmental uncertainty as a limiting factor to success in the exploitation of such resources.

Research Design

The research is quantitative in nature where the researcher is objective in investigating relationships between variables. Numerical data that is suitable to be analyzed statistically is collected by a Survey-based approach. The design is suitable in the testing of hypotheses and the analysis of the causal relationships.

Methodology

Cross-sectional survey technique is used, in which the information is gathered at one time. This approach is very common in organizational and management studies because of its effectiveness in time and resources.

Purpose of the Study
This study is explanatory in nature because it aims at explaining the cause and effects of having a green transition, perceived environmental uncertainty, and the innovation ecosystem.

Type of Investigation
The nature of the investigation is causal because the research will investigate the impact of independent variables on the dependent variable.

Unit of Analysis
The individual employee who works in the various organizations is the unit of analysis in this study. Employees are chosen due to their direct involvement in the organizational processes, and these employees can make accurate report on the perceptions regarding the green practices and environmental uncertainty.

Population and Sampling Procedures
The study population consists of the employees who work in diverse organizations in the different industries. The convenience sampling is applied because of the limitations of access. It is aimed at having a sample size of about 300 respondents which is deemed to be sufficient in regression analysis and generalization in similar contexts.

Research Strategy
The strategy embraced in the research is a survey strategy that enables efficient collection of data on a great number of respondents and can be analyzed statistically.

Time Horizon
This research operates on a cross-sectional time basis because the data is gathered at one point and not over a long duration.

Sources of Data
The research is based on primary data, which is gathered directly by the researcher using the questionnaires. The theoretical framework and literature review are supported using secondary sources like journal articles and reports.

Data Collection
The research relies on the self-administered questionnaire as the method of data collection, which is sent online and in printed edition. The respondents will be guaranteed confidentiality and anonymity to make them be honest. Participation is voluntary.

Techniques and Procedures
The collected data are analyzed using SPSS. The following techniques are applied:
- Descriptive statistics to summarize demographic information
- Reliability analysis (Cronbach's alpha) to assess internal consistency
- Correlation analysis to examine relationships among variables
- Regression analysis to test the proposed hypotheses

These techniques are appropriate for examining the impact of green transition and perceived environmental uncertainty on the innovation ecosystem.

Data Analyis
Demographic table

The demographic features of the respondents are represented in Table 4.1. In terms of gender, most of the respondents were women (87.9%, n = 145) with male respondents only making up12.1 percent (n = 20). This means that the sample of the current study is female dominated. In terms of age distribution, the majority of the respondents were aged 3140 years (40.0% n=66) then the 40 years and above age group (27.9% n=46). The number of respondents in the 26 to 30 age bracket was 26.7 (n=44) and the percentage of respondents in the 18-25 age bracket was relatively lower (5.5, n=9). This implies that the sample was composed of mostly mature and experienced people. With regards to the level of education, the greatest percentage of the respondents was PhD or higher qualified (44.3, n = 49), then 37.6% with a master degree (n = 85). The number of bachelor's degree holders was 18.1 (n = 31) of the total number of respondents. This sample is highly educated and this aspect increases the credibility and reliability of the study findings.

Table 1

	Category	No of respondents	Percentage
Gender	Male	20	12.1%
	Female	145	87.9%
Age	18-25 years	9	5.5%
	26-30 years	44	26.7%
	31-40 years	66	40.0%
	40 and above	46	27.9%
Education	Bachelor	31	18.1%
	Masters	85	37.6%
	PhD and above	49	44.3%

Descriptive Statistic

Table 1 shows the descriptive statistics of the study variables, that is, green transition, environmental certainty perception, and the innovation ecosystem. The measurement of all the variables was done on a five-point Likert scale that is between 1 (strongly disagree) and 5 (strongly agree). The findings show that the green transition has a reasonably high mean (M = 3.88) which implies that the respondents think that their organizations were mostly involved in the green transition activities. This shows that there is a positive movement towards environmental sustainability strategies in the sampled organizations. Comparatively, however, perceived environmental certainty has lower mean score (M = 2.65) and depicts that the respondents have moderate to low perceived environmental certainty. This implies that organizations are facing an environment that is filled with uncertainty and unpredictability in the external environment. Lastly, the innovation ecosystem as the dependent variable has the highest mean value in the variables (M = 4.04). It means that a respondent is extremely confident that his or her organization has a fully developed innovation ecosystem, with an effective cooperation, sharing of knowledge, and practices oriented towards innovations.

Table 2

Variables	Minimum	Maximum	Mean	Std. Deviation
Green Transition IV (1)	1.00	5.00	3.8833	3.8833
Percieved Envronmental Certainity IV (2)	1.0000	5.000	2.648	2.648
Innovation Ecosystem (DV)	1.000	5.00	4.03	4.03

Correlation

The correlation between the variables measured by the study is shown in Table 4.3 which includes the green transition (IV1), perceived environmental certainty (IV2) and innovation ecosystem (DV). A Pearson correlation was used to test the strength and direction of the relationships between the variables. The findings

indicate that there is a moderate and statistically significant positive correlation between green transition and innovation ecosystem (r = .423, p <.01). This implies that the more developed the innovation ecosystem is the higher the level of green transition practices which confirms the idea that the environmental sustainability initiatives play a role to the positive innovation outcomes. Moreover, the perceived environmental certainty has a negative and significant correlation with green transition (r = -.438, p < .01), indicating that the more organizations practice green transition the more the likelihood of them to work under conditions of less perceived environmental certainty. This can mean that environmental uncertainty is a motivating factor to green strategies adopted by organizations as a proactive measure. The correlation between perceived environmental certainty and innovation ecosystem is on the contrary negative, but weak and statistically insignificant (r = -.151). This implies that perceived environmental certainty is not strongly directly related to the growth of the innovation ecosystem in the existing sample.

Table 3

	IV (1)	**IV (2)**	**DV**
IV (1)	1	-.438**	.423**
IV (2)	-.438**	1	-.151
DV	.423**	-.151	1

Regression Analysis

Table 3 is the findings of the regression analysis that looked at the impact of green transition (IV1) and perceived environmental certainty (IV2) on the innovation ecosystem (DV). The findings show that the effect of green transition (IV1) on the innovation ecosystem is positive and statistically significant (B = .3921, t = 5.58, p = 0.001). This relationship is also strong as the confidence interval (LLCI =.2534, ULCI=.5308) excludes the value of zero. This observation indicates that the more green transition programs, the better the innovation system will be. On the contrary, the perceived environmental certainty (IV2) does not demonstrate the statistically significant impact on the innovation ecosystem (B =.0334, t =.54, p =.592). The confidence interval (LLCI = -.0894, ULCI =.1562) encloses the number zero, which shows that perceived environmental certainty is the factor that does not significantly influence innovation ecosystem outputs in the given model. The value of the constant (B = 2.43, p < .001) also has a value, which means that the innovation ecosystem would be expected to have under both predictors set at zero.

Table 4

Predictor	**B**	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	2.4254	.3788	6.4027	.0000	1.6774	3.1735
IV1	.3921	.0702	5.5820	.0000	.2534	.5308
IV2	.0334	.0622	.5369	.5921	-.0894	.1562

Table Summary of Hypothesis

The findings of the hypothesis testing according to the regression analysis are summarized in Table 4. The evidence suggests that the Hypothesis 1 (H1) that suggested that green transition is positively influential in an innovation ecosystem is upheld. This finding supports the theory that organizations that follow green transition practices have higher chances of developing a better and more efficient innovation ecosystem. Hypothesis 2 (H2) according to which the perceived environmental uncertainty significantly influences the innovation ecosystem is, in contrast, not confirmed. The findings indicate that perceived environmental uncertainty has a no or weak direct impact on the innovation ecosystem in the current study.

S. No	**Hypothesis**	**Result**
H1	Green transition has a significant positive impact on the innovation ecosystem	Supported

H2	Perceived environmental uncertainty has a significant impact on the innovation ecosystem	Not Supported

Conclusion

Discussion

The present paper has examined how the ecosystem of innovation depends on the effect of green transition and perceived environmental uncertainty, based on the Resource-Based View (RBV) theory. The findings have revealed that green transition has a positive effect on the ecosystem of innovations, and perceived environmental uncertainty has a negative effect on the ecosystem development. Green transition can help to facilitate innovation by supporting sustainable practices, eco-innovation, and network cooperation between organizations which follows recent studies (Khan et al., 2021; Kiefer et al., 2021; Zhou & Li, 2024). The RBV perspective of green transition enables firms to develop the most valuable and scarce resources, such as green knowledge, environmental capabilities, and trustworthiness towards the stakeholders, which have a positive impact on the performance of the ecosystem at the level of innovation (Barney, 1991; Khan et al., 2021). On the other hand, the perceived environmental uncertainty exert an adverse impact on the ecosystem of innovation by deterring long-term investment, collaboration, and risk-aversion of the organizations (Hu et al., 2024). High levels of uncertainty that currently exist discourage efficient utilization of the resources and destroy the process of coordination among the ecosystem actors. These findings align with findings of other studies that showed that environmental instability disrupts innovation-seeking decisions and joint innovation (Zhou & Li, 2024).

Proposition

The propositions supported with the results of the study and theoretical basis include the following:

1. Green transition has a positive effect on the innovation ecosystem through the improvement of sustainable and collaborative innovation.
2. Perceived environmental uncertainty has an adverse impact on the innovation ecosystem, through decreasing innovation investment and coordination.
3. RBV theory is a useful theory that explains the role of green transition as a strategic resource, and environmental uncertainty restricts the use of resources in the innovation ecosystem.

Implications of the Study

Theoretical Implications

The study makes a contribution to the research since it uses the RBV theory to the green transition and innovation ecosystems. It underlines green transition as an intangible and strategic resource that facilitates innovation at the ecosystem level, however, it also states that the perceived environmental uncertainty represents a situation-specific limitation on the usefulness of the resources (Barney, 1991; Zhou & Li, 2024).

Practical Implications

In practice, the results indicate that managers need to focus on green transition programs to enhance innovation ecosystems and attain sustainable competitiveness. Strategies to deal with environmental uncertainty included better information sharing, adaptive planning, and regulatory awareness should also be applied by the organizations (Hu et al., 2024). The policymakers can provide stability in regulations and incentives to promote green innovation in ecosystems (Khan et al., 2021).

Limitations of the Study

There are a number of limitations to this study. To begin with, it has a cross-sectional research design, which limits causal interpretation. Second, response bias may be present through the use of self-reported data. Third, the convenience sampling restricts the external validity of the results to other industries or regions.

Further Research

Subsequent research can take a longitudinal design to identify changes in the nature of green transition and innovation ecosystems with time. The moderating or mediating variables that may be investigated by the researchers include organizational culture, leadership, or green innovation capability. It might also be recommended to conduct comparative studies in different industries or countries to make the findings even stronger (Zhou & Li, 2024).

Conclusion

Lastly, the paper has revealed that green transition is highly significant in the improvement of innovation ecosystems. Perceived environmental uncertainty is demanding, on the contrary. By applying the RBV theory, the research study has made it clear that green transition is a strategic resource that facilitates sustainable innovation and environmental uncertainty constrains efficient usage of the resource. Results of the study have vital implications to the researchers, managers, and policy makers in their pursuit of resilient and sustainable innovation ecosystems.

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