

# Psychological Factors Influencing Entrepreneur's Hometown Identity in Relation to Eco-Innovation

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Received: October 24, 2022

Accepted: December 26, 2023

Online Published: February 4, 2023

doi:10.5539/ijbm.v18n2p87

URL: <https://doi.org/10.5539/ijbm.v18n2p87>

## Abstract

Despite being the underpinning of economic development, entrepreneurs encounter numerous obstacles and limitations while trying to innovate, especially when it comes to eco-innovations. Eco-innovations have been acknowledged in the European Union (EU) as a significant factor in sustainable and environmentally friendly development. Even though there has been an increase in eco-innovation research, it is still unclear what motivates entrepreneurs in the informal sector to innovate in this way. This research assesses a set of eco-innovation principles created around the idea within informal economic enterprises by using a triple conceptual grounding approach. Researchers suggest that an entrepreneur's sense of place at home influences their success in terms of eco-innovation. The research has two objectives: 1) To identify the primary obstacles to the advancement of eco-innovations, and 2) To assess how well the principal obstacles are progressing among EU nations. In addition, researchers investigate how internal and external environmental variables influence management discretion (i.e., institutional ownership and market complexity). Researchers suggest that market complexity acts as a positive moderator while ownership concentration acts as a negative moderator of the positive association between entrepreneurs' community identification and eco-innovation. The results confirm these hypotheses employing openly traded corporations from 2002 to 2016 in environmentally damaging areas. This study contributes to the existing literature on the social responsibility of companies and upper-echelon theory and has significant practical complications.

**Keywords:** entrepreneur, eco-innovation, Echelon theory, Hometown

## 1. Introduction

The notion of eco-innovation emerged at the end of the twentieth century as a consequence of a growing awareness of threats linked with the natural surroundings and responsibilities for the ecosystem. Though it often refers to innovation that has a consequence for the environment, the notion of eco-innovation is described in books in a variety of ways. According to the traditional definition of eco-innovation, it is a real invention that adds value for the consumer and the company while also having a major positive effect on the environment. Industrial, technology, and service operations that have a smaller negative effect on the environment are referred to as environmental (Cai & Li, 2018). The core of eco-innovation is an integrative strategy for applying newly developed ideas to the preservation of the environment at every level and in every industry. Manufacturing, innovation, and operational processes like these lessen the harmful impacts on the environment. Eco-innovation is a chance to put innovative solutions into practice that would boost innovation levels while allowing for more efficient use of natural resources and a decrease in adverse environmental effects. Eco-innovation is also defined as developing novel, compete evaluated products, mechanisms, methods, facilities, and processes that can meet human needs, improve everyone's quality of life, and do so while using the fewest resources possible per processing facility and emitting the fewest harmful chemicals (Munodawafa & Johl, 2019). The environment has recently emerged as one of corporate citizenship responsibility's top priorities (CSR). To both maximize their commercial development and fulfill their social duty, businesses are becoming more conscious of ecological challenges and employing sustainability management strategies. Consequently, green innovation has garnered a lot of interest from researchers and practitioners as a novel environmental sustainability pattern. Several

precursors of green product innovation have been identified by current studies, including technological advantages, the exchange of green knowledge, and market pressures (Leitner, Wehrmeyer, & France, 2010). Demand for businesses, particularly manufacturing businesses, to act in a more ecologically sensible way is rising as environmental problems develop. This demand motivates businesses and their executives to adopt or create novel approaches to address environmental dangers. These approaches can be classified broadly as eco-innovations, which are innovations that "involve new or modified procedures, methodologies, structures, and product lines to avoid or minimize harm to the environment." The benefits of eco-innovation, including the reduction in carbon dioxide emissions and enhanced economic conditions, are consistently demonstrated. Researchers are paying more attention to the problems of what motivates eco-innovation and how organizations participate in it as a consequence of the increasing desire for eco-innovation and awareness of its positive advantages (Wang, Shen, Chen, & Carmeli, 2021). One crucial goal for improvement is the application of the concept of long-term sustainability (SDE), which is represented, among other things, in the European Commission's recently implemented Europe 2020 policy. In comparison to other EU nations, the standing of the Polish business sector regarding overall innovation and eco-innovation is poor. Businesses in Poland are introducing environmental primarily as a result of changes to laws that the State has implemented (Jansson, 2011). The majority of eco-innovation centers on methods for lessening commercial contamination in the environment. Nevertheless, to see long-term progress in the area of eco-innovation, more money must be spent on these kinds of initiatives, and more people must be aware of enterprises from different categories. Creating a successful, resource-efficient business through the use of environmentally friendly approaches is known as sustainable progress. Advances in invention, which enable more efficient resource utilization, have a positive impact on all economic sectors. Advanced economies are facing a significant problem with the adoption of contemporary environmental solutions, notably in small and medium-scale enterprises, which are the largest[6].

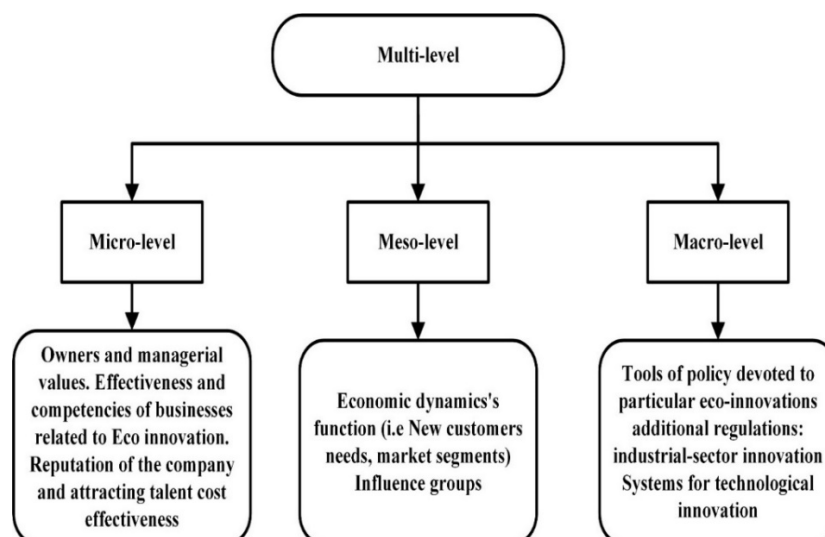


Figure 1. Eco-innovation framework

Prior studies have confirmed the notion that ecological or eco-innovations vary from other breakthroughs in terms of the consequences and factors that contribute to their implementation, emphasizing in particular the significance of legislation as a catalyst. In this part, as earlier mentioned, researchers summarize the findings of earlier studies by dividing them into three levels: micro, meso, and macro mentioned in figure 1. This segment also proposes a multilevel approach to examine the impact of various eco-innovation factors. Furthermore, we chose this area of study because there is little research on what motivates behavioral intentions in small- and medium-sized businesses (SMEs). As a result, the report's results may assist policymakers to create environmental policies and also can notify SME shareholders about what motivates their companies to take an ecological approach (Amara & Chen, 2011). Researchers would want to raise a few points about this framework before summarizing the key findings in each stage. Firstly, researchers must refer to the incorporation of various eco-innovation indicators, which may be connected to potentially ambiguous findings when combining previous research. Researchers must also emphasize how these tiers complement one another. Consider, for instance, how a local authority's comprehensive approach at the meso level is a crucial driving force behind eco-innovations in

Enterprises with poor absorption capacity (micro level). Lastly, researchers must emphasize that some variables are assigned strong significance than many others dependent on the authors' theoretical standpoint. While the research on microeconomics highlights the value of regulatory frameworks, the research on advancement highlights the crucial role of other variables in the creation of eco-innovations, particularly supply-side considerations (including such organizational capabilities of companies) and demand-side processes (Díaz-García, González-Moreno, & Sáez-Martínez, 2015).

In a modern country, the local identification of the Chinese has emerged as the social heritage for the revival of remote regions and the continuous growth of neighborhoods. It is a component of transmitted heritage. China used to be a traditional farming civilization where people relied on the same land for survival for centuries. "Falling leaves returned to their origins" notwithstanding their migration to other nations. Nevertheless, rural communities have historically relied on their local wise men to develop their communities, and they've grown to be a crucial component of rural administration. They uphold law and order, proactively engage in neighborhood activities, and significantly enhance local administration (Sáez-Martínez, González-Moreno, & Hogan, 2014). The distinctive features of rural society's diverse pattern solidly establish the rural Chinese identity and continue to influence emigrants' thought processes, social assessments, and behavioral choices today. The hometown identification has the biggest influence on locals' desire to take part in countryside rehabilitation and could increase entrepreneurs' internal hydropower. Defectors consequently tend to actively participate and congregate in familiar societies for collaborating to revitalize the village as a result of their local connection. Or, to put it another way, the hometown identification of emigrants is the soul and essence of rural regeneration and the solution to the dilemma of modern poverty alleviation. It is a specific emotional process of protection that is focused on sentimentality, rural culture, and reminiscence, with observation, conflict, integration, and engagement as potential pathways. According to the aforementioned justifications, operations research may be used to explain how hometown connection plays a part in the entrepreneurial success of immigrants (Sun, Miao, Feng, & Ye, 2022).

While the research on environmental economics highlights the significance of regulations, the research on creativity stresses the crucial role of other variables in determining eco-innovations, particularly supply-side variables (such as businesses' organizational capacities) and demand-side processes (such as customer and societal requirements on corporate social responsibility) demonstrated that these characteristics are inadequate for spotting environmental chances, and they assume that awareness of the social and natural environments is crucial for spotting sustainable opportunities. To support their claim that people are more likely to recognize seen and as their environmental attitude grows, they created an econometric analysis. The research on entrepreneurship has lately seen the emergence of a new exploratory study. The focus just on the protection of the environment in business strategy is a topic of recent research. This emphasis does not ignore further factors (social and economic). However, managing the impact of the bad consequences of enterprises' economic activities on these firms' local surroundings is given top attention. Therefore, creating a long-term sustainable company model is the objective (Phung, Trinh, Nguyen, & Trinh, 2022).

The ecological domain and entrepreneur both help to accomplish objectives. Three principles, environmental protection, and long-term sustainability—support the idea of producing high quality. Contrarily, the typical definition of entrepreneurial activity is the identification of market gaps where innovators are capable of recognizing and investigating small business prospects. To achieve sustainable development, ecopreneurship is the development of creating new possibilities that contribute to environmental protection. Ecopreneurship, according to the author, is "entrepreneurship with an ecological lens." In light of this, both from a highly hypothetical or scholarly viewpoint as well as from a pragmatic standpoint, sustainability and ecologism are becoming more and more popular. There is a need for a production process that reduces harmful consequences to the environment. As a result, it is interesting to examine how important actors like customers, wholesalers, and manufacturers react to this shift into a more environmentally friendly and sustainable paradigm (Sharma, Paço, & Kautish, 2022).

The above section presents a brief note on eco-innovation and the hometown identity of the entrepreneur following the introduction section II presents the related work done before. Section III defines the methodology and Section IV presents the hypothesis result proposed in section III and finally, the research concluded with the overall work done in the research.

## 2. Related Works

In research reports, inventions with a requirement to ensure are referred to as green innovations, eco-innovations, ecological technologies, or environmental innovations. This is a developing field, and vocabulary and concepts

have not yet been fully established. Additionally, a study of the research indicates that it's important to pinpoint the difficulties that emerging nations, particularly those located in resource-rich areas, have while implementing eco-innovations. Such is the situation with Brazil's Manaus Free Trade Zone (MFTZ). By examining the effects of these variables and organizations' innovation-oriented cultures, this research seeks to discover variables that support or hinder eco-innovations in this setting. This case study examined the MFTZ's industry landscape. In-depth interviews, on-the-spot inspection, and examinations of official records were used to gather the data. The content approach was used to evaluate the data that was gathered. The findings showed that despite the country's reputation for environmental challenges, eco-innovation projects are still in their infancy. The businesses under study were also reliant on their capital, which indicates that there is little attention paid to regional problems and little money invested in eco-innovations. In summary, these findings contribute both theoretically and practically to the field of eco-innovation study. In the beginning, it examines what motivates green innovation in developing nations, particularly in free trade zones. Learner drivers have now been discovered, and those mentioned in earlier studies have been shown to have a less substantial effect on the environment. In addition, it offers a comprehensive grasp of the primary eco-innovation mechanisms as well as the regional factors that influence eco-innovation. Finally, it provides important understanding for researchers and professionals who are confronted with the difficulty of implementing sustainability from an environmental point of view (Aloise & Macke, 2017).

Particularly since the 1990s, the idea of eco-innovation has started to be taken into account as a way to mitigate ecological harm. Waste production, environmental damage, and manufacturing resource use are all predicted to decrease thanks to eco-innovation. The impact of eco-innovation on environmental and financial efficiency, though, hasn't gotten much attention. By examining the impact of eco-innovation on both financial and environmental performance, this paper aims to close this gap. Data was gathered for this purpose by compiling questionnaires from 219 Turkish industrial companies. Researchers discovered using hierarchical linear modeling that environmentalism seems to have a direct impact on preventing pollution, conserving resources, and recycling; additionally, it has an indirectly favorable impact on cost reductions and consequently on economic strength. Volunteers in the BBC Prison Research were arbitrarily placed in groups as guardians or convicts for this exploratory case study. This study looks at how leadership mechanisms are affected by treatments meant to strengthen inmates' sense of a common social identity. It provides psychometric, behavioral, and observation-based evidence in support of the claims that (a) socialization enables governance, (b) good leaders encourage the formation of cultural identity, and (c) the long-term achievement or lack of government depends on the effectiveness of identity-related projects. The study also demonstrates how identity loss contributes to both the formation of authoritarian leadership in general and transformation in particular (Yurdakul & Kazan, 2020).

The connection between the environment and entrepreneurs has to be reexamined after the UN adopted seventeen Sustainable Economic Goals in 2015. Financial metrics were the foundation of traditional metrics of entrepreneurship development; observatories like the Global Entrepreneurship Monitor (GEM) expanded these to include socioeconomic and cultural factors. To promote sustainable economic growth, environmental sustainability, and social protection, it is now imperative to evaluate and examine the relationships between corporate sustainability and eco-innovation. This report suggests a new instrument for measuring eco-innovation and responsible entrepreneurship in enterprises and evaluating their level of compliance with UN SDGs for GEM's evaluation. In particular, it proposes a novel assessment method that incorporates but simplifies a broad range of complicated characteristics that may be distilled into a list of items (problems) to assess a company's commitment to sustainable development in entrepreneurship—social, economic, and environmental. The findings could be compared to other pertinent factors and markers suggested by the UN to ascertain whether or not there are any causal or explanatory correlations. Academics and those working in the field of entrepreneurship should find the concept useful, particularly now that its ecological qualifications and environmental consequences are in the public eye. It is a wonderful complement to current data collection techniques. In particular, it proposes a novel assessment method that incorporates but simplifies a broad range of complicated characteristics that may be distilled into a list of items (problems) to assess a company's commitment to sustainable development in entrepreneurship—social, economic, and environmental. The findings could be compared to other pertinent factors and markers suggested by the UN to ascertain whether or not there are any causal or explanatory correlations. Academics and professionals working in the field of entrepreneurs should find the concept useful, particularly now that its ecological qualifications and ecological consequences are in the public eye. It is a wonderful complement to current data collection techniques (Roomi, Saiz-Alvarez, & Coduras, 2021).

Scientific research and the corporate climate literature demonstrate that eco-innovation, also known as green product innovation or green development, is currently a source of market advantage. The dynamic of industrial estates and the interconnections that are fostered within them are of great interest to the scientific establishment. The combined study of these two ideas, and more precisely the elements that propel eco-innovation, particularly in a cluster, has not, too far, been thoroughly investigated. By filling in this gap and offering a model based on data gleaned from the literature and a thorough investigation of behavior in connection to eco-innovation in various industries, this article analyzes eco-innovation in industrial estates. The findings imply that incorporating eco-innovation factors and metrics may have advantageous effects, such as enhancements at the tactical level and a decrease in expenses and material consumption. The idea of an eco-innovation cluster concept is put forth. It takes into account eight important variables that work to increase its degree of competitiveness by encouraging eco-innovation inside clusters. Three external criteria that examine the impact of initiating eco-innovative operations are included in the model along with five individual processes that measure company capabilities. This approach may assist cluster managers and business leaders in developing more effective strategies to boost eco-innovation and promote competition. It might also work as a manual for government agencies carrying out eco-innovative tasks in various industries (Mercado-Caruso, Segarra-Oña, Ovallos-Gazabon, & Peiró-Signes, 2020).

Due to its ability to mitigate a company's sustainability challenges, eco-innovation has drawn a lot of interest from academics and business professionals. The majority of earlier studies emphasized responsive eco-innovation strategies based on first-hand observations. By emphasizing preemptive eco-innovation and utilizing a supplementary large sample, this research will fill the current research deficit. Investigating the link between proactive eco-innovation and businesses' business results is the main purpose of this research. The study would thus use secondary cross-sectional data to develop the proactive eco-innovation rating. Also covered in the article is how proactively eco-innovation ties to recycling and reuse. To understand the relationships between the variables, the Resource-Based View (RBV) hypothesis was applied. From 2016 to 2019, this research examined 31 publicly traded energy businesses in Malaysia. By incorporating the 3 environmental components (item, procedure, and innovation) that are relevant to the energy industry, an active environmental score was deduced. Proactive environmentalist (brand, processes, and technological eco-innovation) was discovered to have a direct impact on business economic conditions by using spontaneous GLS estimated regression modeling. Additionally, a responsible prototype immediately connects quality control and quality eco-innovation to recycling and reuse. The conclusions imply that the company's policymakers must aggressively implement eco-innovative strategies. Since it is affordable and contributes to lowering potential industrial contamination, it will have a good impact on recycling and reuse (Johl & Toha, 2021).

Most significantly affecting corporate decision-making and team management style are the behavioural decision-making traits of the top executives (TMT). This research empirically examines the links in both the four irrational factors of TMT and green innovative products employing cross-sectional data of A-share listed industrial companies ranging from 2010 to 2019. (GTI). The findings indicate that, overall, social conscience, innovation essence, and risk-taking life force are strongly linked with GTI while pollution control awareness is substantially negatively linked with GTI. These interactions are also demonstrated by the chemical impact of the four levels of uncertainty. According to heterogeneity research, various sorts of firms are affected differently by TMT irrational traits. The estimated coefficients for large and state-owned businesses are essentially comparable with the entire sample; for small and privately held businesses, the risk-taking spirit continues to be a major factor affecting business GTI, while other irrational factors have lost their significance. Another study demonstrates that the corporatization level and untapped business leisure assets could modify the linkages among the irrational traits of TMT and GTI. Overall, the significance of irrational factors becomes more apparent when slack assets are reduced; the extent of economic liberalization determines how much the adventurous spirit may boost innovation, and increasing firm R&D spending can considerably advance GTI. The research findings are a crucial source of information for developing and implementing GTI strategy (Wang, Zeng, & Li, 2022).

An international initiative to adopt environmental sustainability gave rise to eco-innovation. As a means of attaining sustainable growth, states and businesses devised and put into practice strategies and guidelines for eco-innovation. New initiatives have helped to promote eco-innovation in industrialized nations, particularly in European states and European nations. Eco-innovation strategies have lately become more prevalent in developing nations. As a result, this paper examines eco-innovation regulations in Asian nations. Utilizing types of policy instruments, policies about eco-innovation in 17 Asian nations were examined. Categories of developmental phases were evaluated and contrasted with national strategies for eco-innovation. The findings

show that Asian countries have both comparable and distinct national policies for eco-innovation. Seventeen regions were categorized into four groups based on how well policy tools for eco-innovation balanced the push of science (real economy) and the pull of the marketplace (financial sector): innovators, following, vacationers, and non-adopters. The findings offer guidance for building national eco-innovation plans in Asia's developing nations. As a result, our study helps to promote and disseminate eco-innovation for sustainability in Asia (Jang, Park, Roh, & Han, 2015).

### 3. Method

Utilizing a threefold theoretical foundation method, this study evaluates a set of eco-innovation guidelines established from around terms inside underground financial firms. According to studies, an entrepreneur's feeling of being at home affects how successful they are at eco-innovation. The investigation has two goals: 1) to identify the main barriers preventing eco-innovation advancement, and 2) to evaluate how effectively the main barriers are being overcome among EU countries. Additionally, academics look into how managerial decision is influenced by external and internal environmental factors (i.e., institutional ownership and market complexity). According to data, institutional ownership operates as a negative modulator of the favorable link between an entrepreneur's sense of community and eco-innovation, whereas market intricacy acts as a positive modifier. Based on the above-mentioned system following hypotheses were developed based on the factor influencing the entrepreneur's hometown identity concerning eco-innovation.

#### 3.1 Hypothesis

Hypothesis 1: Positive connection between entrepreneur hometown identity and eco-innovation regulation.

Hypothesis 2: Entrepreneur alertness has a positive substantial influence on eco-innovation.

Hypothesis 3: Entrepreneur success is directly proportional to the hometown identity.

Hypothesis 4: The beneficial association between the entrepreneur's hometown and a company's organizational innovation is strengthened by possible complications.

Hypothesis 5: The effectiveness of eco-innovation by an entrepreneur is positively correlated with their hometown character.

#### 3.2 Eco-Innovation Regulation

Researchers anticipate that entrepreneur hometown identification has a favorable impact on a company's eco-innovation in the two ways listed below based on the upper echelon's theory and the impacts of place branding on decision-making. Firstly, the upper echelons model suggests that the entrepreneur's psychological discrimination could have a significant effect on the results of the corporation's strategic decision-making. Researchers suggest that a psychological predisposition resulting from place branding called their hometown identification plays a significant part in shaping strategic initiatives. Consumers' pro-environment intents and actions are linked to place identification. People form long-term emotional links with their local natural surroundings via their everyday actions, and these attachments may control people's thoughts and actions towards the environment, such as everyday supply and environmental stewardship (Aloise & Macke, 2017). According to this, since an entrepreneur's hometown is where they were born and spent their formative years, they would develop an emotional bond with the surroundings there and consequently behave in a friendly manner. Agricultural biotechnology is a crucial component of ecologically friendly corporate practices since it not only uses fewer materials, produces less trash, and improves a company's ability to achieve sustainable growth, but also lessens contamination and impact on the environment. As a result, businesses with local Entrepreneurs could be more sensitive to regional environmental problems and more inclined to actively produce environmentally acceptable items and enhance the production process sustainability impact to minimize ecological contamination (Santos, Rezende, & Basso, 2019).

Secondly, owing to site identification, people are more inclined to support the causes of their native neighborhoods. Individuals who are emotionally devoted to their ancestral homelands may make judgments based on economic considerations and the objectives of the local community. As a result, hometown identification could stimulate pro-social incentives in persons, causing them to prioritize helping others out of concern for the wellbeing of the local group. Local entrepreneurs could care more deeply about the health and well-being of their community and have a moral duty to prevent or address environmental concerns. By lowering risks and raising ecological integrity, green marketing serves businesses, the ecosystem, and the public good as a pattern of environmental sustainability. Economic eco-innovation decisions will affect not just the company and the ecosystem, but also consumers, vendors, workers' families, and other people in the community. Eco-innovation, therefore, is frequently viewed as a pro-social business practice that attempts to enhance the

welfare of certain people, groups, or organizations. Researchers suggest that local Entrepreneurs will exhibit prosocial attitudes and behaviour and that they'll be more interested in the welfare of others in their communities (Zhang & Walton, 2017). Local entrepreneurs therefore more inclined to safeguard the environment using eco-innovation techniques that would enhance human welfare while still pursuing financial success. Therefore, researchers recommend the following:

*Hypothesis 1: Positive connection between entrepreneur hometown identity and eco-innovation.*

### 3.3 Alertness of Entrepreneur

A user's capacity to spot chances passed up by someone else is referred to as alertness. Enterprise architecture has now been regarded as a key component in identifying opportunities since it increases executives' or entrepreneurs' sensitivity to corporate information, as shown by their astute assessment and perceptive judgment. EA also develops as a result of market, technical, and environmental developments. EA is hence the quest for creativity. EA can deepen the grasp of how ideas were developed and the critical judgments that go into spotting business prospects. An observant businessperson subsequently has become more aware of the development. As per Kirzner's theory, innovation investigation is heavily focused on the connection between EA and development. Additionally, awareness entails monitoring and seeking for data to investigate novel concepts, relationships, and interconnections that are centered on obtaining new knowledge, as well as assessing and judging recent changes. Many authors contend that EA serves as the emotional foundation for entrepreneurial intention and may encourage businesspeople to adopt innovations. Entrepreneurs with increased vigilance could spot commercial opportunities from knowledge imbalances in the sustainability context (Vence & Pereira, 2019). Researchers also advise savvy businesspeople to form organizations that promote eco-friendly practices and the use of natural resources effectively. As a result, Entrepreneurs might assist in the integration of eco-innovation and enhance the development of a new asset that has a business effect. The vital function of Entrepreneurs in the involvement of the investigation of various types of creativity was stressed by some authors. In the case of eco-innovation, some academics have maintained that there is a significantly positive association between Entrepreneurs and creativity. A savvy businessperson consequently learns more about eco-innovation. As a result, researchers anticipate that attentiveness has a favourable impact on eco-innovation (Phung, Trinh, Nguyen, & Trinh, 2022). Consequently, the following claim is made:

*Hypothesis 2: Entrepreneur success is directly proportional to the hometown identity.*

### 3.4 Mediating Role Strategies

The goal of the homogenization strategic plan is to address the problems the foreign company faced when establishing a business, the swap of market intelligence, and the mutual discussion of viewpoints. The accumulation tactic assumes the function of understanding generation and sharing, which is defined as "the act of offering information to other members of the organization." Intellectual capital and sharing are essential team processes in an urbanized setting since they are not completely utilized if things to look at are not distributed. The mainstay of entrepreneurship is a knowledge-intensive commercial activity. Expansion of teams and managerial aggregation methods are essential in this knowledge-driven economy. The entrepreneurial eco-innovation adopts open interaction and development with defined objectives, aiming for resource complementarity, labour division and coordination, value sharing, and cohabitation. The notion and connection structure that the hometown identification creates are crucial elements that improve the transmission of information between cluster participants. The sense of belonging to one's hometown strengthens relationship quality, which fosters the creation and exchange of knowledge. Technical entrepreneurial knowledge primarily consists of expertise in administration, design, and development, operational processes, and core technological technology research and development. For instance, individuals with a variety of skills and understanding, such as those with experience in the computer industry, may tackle complex issues related to technology, operational plans, and marketing strategies. Solutions and education for entrepreneurship for the communities. To help the peasants, sell their commodities and develop new markets, returning residents utilize this information to live to stream their items. This enables the villagers can become self-sufficient by selling their farm goods and other products (Vence & Pereira, 2019). New arrivals create a cluster area, which is a crucial resource for achieving sustainability of the environment and regional productivity expansion. Information could be transmitted and disseminated to the people and amongst them through collaborative organizational learning, creating a network. The overall performance of entrepreneurship has increased as a result of this. Since information sharing reduces the likelihood of errors, it is more likely that entrepreneurial projects will be carried out with few errors. Researchers presume the following in light of the aforementioned research results:

*Hypothesis 3: Entrepreneur success is directly proportional to the hometown identity.*

### 3.5 Moderating Role

The peculiarities of the industrial structure have a significant effect on management choice. In this essay, researchers take into account possible complications and significant aspect that has an impact on organizational structure—as a significant component that impacts a company's choice. The level of competition and variability in a company's operational environment is reflected in the intricacy of the business. Studies already conducted demonstrate that entrepreneur judgment is significantly impacted by how many options and diversity are available in the workplace. According to statistics, management discretion is increased when there is less restriction and greater uncertainty. For instance, the researcher contended that oligopolistic companies offer the least latitude since stakeholders are required to follow informal rules that specify the businesses' areas of focus and safeguard their competitiveness. Entrepreneurs of companies that operate in corporate entities or under strict tournament, in way of comparison, are not subject to these limitations and have a substantially higher degree of managerial judgment (it is true that in governed corporate entities, limitations may be extreme, but this are not due to the nature of the market structures on its own). Researchers underline that executives who work in dynamic situations frequently experience higher levels of uncertainty and have additional pattern recognition requirements (Larbi-Siaw, Xuhua, Owusu, Owusu-Agyeman, Fulgence, & Frimpong, 2022). The Entrepreneur will consequently have more influence over the company's decision-making in a highly complicated environment. Using this justification, we suggest that the association between local Entrepreneurs and green innovative thinking is moderated by possible complications. The spectrum of managers' unproven plans is expanded in a complicated competitive landscape, giving the Representatives greater freedom. This increased flexibility could boost the effect of the entrepreneur's hometown identification on enterprises' eco-innovation. In comparison, highly defined regulations and engagement standards exist in relatively basic market environments, which might also place restrictions on the flexibility of Entrepreneurs. Entrepreneurs' beliefs have a smaller impact on business decisions regarding eco-innovation when they possess less power over corporate strategy than when they possess more discretion. Therefore, researchers suggest that local Entrepreneurs are better able to use their influence to support businesses' eco-innovation when they compete in more complex marketplaces (Yurdakul & Kazan, 2020). Therefore, designers forecast the foregoing:

*Hypothesis 4: The beneficial association between the entrepreneur's hometown and a company's organizational innovation is strengthened by possible complications.*

### 3.6 Hometown Identity

As a result of (1) the upper echelons hypothesis and (2) the impacts of place identification on decision-making, researchers predict that entrepreneurs' hometown identities have a positive impact on eco-innovation. First off, according to the upper echelons theory, an entrepreneur's emotional bias or preference would significantly affect the company's strategic decision-making process and result. Researchers contend that customers' hometown identities, a behavioral bias brought on by place identification, have a substantial impact on business strategies. Since people's hometowns are the places, they were conceived and raised, they would develop an emotional connection with the surrounding ecology and, as a consequence, behave with kindness toward it. As a result, businesses with local entrepreneurs are more likely to be worried about regional ecological concerns and to reduce carbon emissions by actively developing eco-friendly products and improving the atmospheric efficiency of the production processes (Jansson, 2011).

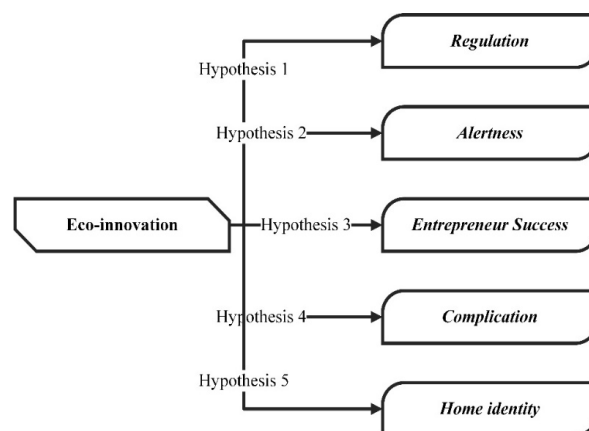


Figure 2. Schematic Framework of eco-innovation



Secondly, Figure 2 shows that individuals have a greater tendency to support the causes of their hometown neighborhood since of place branding. People who have strong emotional connections to their hometowns may consider economic issues and the concerns of the local community when deciding. As a consequence, hometown identification could stimulate pro-social incentives in people, causing them to concentrate on helping others out of concern for the well-being of the hometown group. Researchers contend that local business owners are more inclined to act with a prosocial mindset and care about the welfare of others in their community. As a consequence, local Entrepreneurs are more likely to preserve the environment by using eco-innovation strategies that would benefit people, even as they pursue financial rewards (Ren, Wang, Hu, & Yan, 2021).

*Hypothesis 5: The effectiveness of eco-innovation by an entrepreneur is positively correlated with their hometown character.*

#### **4. Data Collection**

Companies that were publicly traded from 2002 to 2016 make up the research sample. Provinces are incredibly diverse. There are significant regional distinctions in languages, traditions, histories, and culture, which offer enough variety for an entrepreneur to have a diverse hometown experience. As a result, businesses offer a solid sample against which study could test their theories. Researchers utilized the following sample techniques in this research. According to the "List of Enumerated Businesses' Environmental Confirmation Industry Sector" and the "China Securities Regulatory Commission's Compensation Manufacturing Categorization Guidance," researchers first selected the companies with the highest levels of pollution because businesses in these sectors have a more significant effect on the environment and are more concerned about the environment. Second, utilizing the readily available information, we chose the publicly traded Chinese companies in the aforementioned highly polluting sectors from 2002 to 2016 as the initial dataset (Rama, Celestin, Chen, & Martin, 2022).

##### *4.1 Measures*

###### *a. Dependent Variables*

Researchers used the resource-conservation and ecologically responsible patents that companies submitted to quantify the companies' eco-innovation, per the findings. As examples of eco-innovation, researchers looked at patents with the following keywords: "environmental," "durable," "energy conservation," "cycling," "clean," "ecology," "low emissions," "reduction," "ecological sustainability," "nature," "air degradation," and "reducing emissions."

###### *b. Independent Variables*

Hometown is equivalent to 1 if a company's headquarters are in the same city as its entrepreneur, and 0 or else. When researchers actively sought data on entrepreneur hometowns, researchers discovered that the majority of it could only be accessed by the provincial governments and that just a little portion was relevant to the city scale. To relate the entrepreneur's hometown to the region in which the headquarters are located, researchers simply utilized the region data in the logistic regression. The region and city are combined to assess hometown identification in the better strength. If researchers discovered information about the entrepreneur's hometown at the municipal level, researchers matched it to the location of the company's headquarters. Otherwise, just the material at the provincial level was utilized for evaluation (Ren, Wang, Hu, & Yan, 2021).

###### *c. Complexity*

Market sophistication was gauged by looking at competitive intensity. Researchers chose total sales as the scale for calculations and utilized the average of the squares of the market dominance of all companies in a certain industry. Significant market sophistication was represented by lower values.

##### *4.2 Control Variables*

###### *a. Company Age and size*

Older businesses might have been exposed to homeomorphic factors linked to eco-innovations for longer. As a result, company history was adjusted for by counting the decades because of a company's founding. Greater conservatism may be seen in larger companies despite having more resources to participate in eco-innovation. With this assessment, the proportion of the total assets after each year is used.

###### *b. Export*

Prior studies have demonstrated a beneficial relationship between export and eco-innovation. To represent export behavior, researchers utilize a probate model, Export, which is equal to 1 if a company has an export business

and zero elsewhere.

#### c. Independence

According to earlier studies, corporate governance and CSR intensity are associated. To gauge the independence of the board, researchers looked at the independence supervisory board size ratio.

#### d. State-owned Entrepreneur and ROA

Due to their considerable resources, state-owned businesses could foster eco-innovation. They might, though, spend less on ecological development as a result of their lobbying connections shielding them from governmental criticism. Thus, a fake variable was added that had values of 1 for state-owned businesses and 0 for all other businesses. Businesses with strong financial results may afford to adopt more ecological innovation. To assess organizational effectiveness, researchers employed the ROA (return on invested assets) metric.

#### e. Age

Researchers took age into account for the president's effectiveness because it appeared that older Entrepreneurs achieved higher levels of corporate responsibility.

#### f. Gender

Previous research suggests that women may have increasing environmentalist values over men, which might have an impact on the orientation toward green innovation. A dummy parameter with values of 1 for men and 0 for women was added.

#### g. Tenure

Longer-serving Entrepreneurs will become more aware of corporate social obligation expenditures, making them more receptive to external factors and more inclined to participate in ethical environmental actions. The length of time the entrepreneur has held the entrepreneur's job was used as the measure.

#### h. Social Capital

The social power benefit of local Entrepreneurs may be taken into account when measuring entrepreneur sense of place. A hometown Entrepreneur has more family, acquaintances, and other contacts in his or her hometown than a CEO who is not from there and is more conversant in regional accents, traditions, and history. As a result, the local social networking sites give the hometown Members more human value, which strengthens resourcing and interaction outside the company to support enterprises' environmental innovation. Therefore, we took into account the social value of Entrepreneurs. discovered that the community development of Entrepreneurs consists of individuals who have had similar problems in other businesses, elite universities, and foreign economic affiliations, which represents the interconnection and systems that Entrepreneurs have outside of their organizations (Larbi-Siaw, Xuhua, Owusu, Owusu-Agyeman, Fulgence, & Frimpong, 2022). Researchers took into account the three factors below when controlling for the Enterprises' social support. (1) Entrepreneurs' political ties (Integrate): Researchers developed a dependent variable that was classified as 1 if the Entrepreneur is a participant in local, national, or regional people's political legislatures or political consultative sessions and 0 elsewhere; (2) Organizations' participation in other group interaction: A dummy variable was made, with 1 denoting an entrepreneur who belongs to a business group, foundation, educational establishment, or other non-profit organization and 0 denoting a CEO who does not; (3) CEOs' side jobs at other publicly traded companies. Employ substitutes for entrepreneur network connections and expertise gained as a result of experience to a broad range of strategic and administrative concerns brought about by many directorships: Researchers created a fake variable that is coded as 1 if the Entrepreneur has a part-time job at another publicly traded company and 0 elsewhere (Omar, Othman, & Jabar, 2017).

#### 4.3 Model

Researchers estimated the conceptual framework using regular least squares to formulate Hypotheses 1:

$$Eco_{uv} = \alpha_0 + \alpha_1 Home_{uv} + A_{uv} + Year_v + Ind_a + \varepsilon_{uv} \quad (1)$$

In the above equ (1) denotes the eco-innovation,  $Home_{uv}$  denotes the hometown,  $Ind_a$  denotes the industry. Where  $Eco_{uv}$  is the regression coefficient that depicts how well business u performed in terms of green technology in year t. If a registered company's place of registration and the entrepreneur's hometown is the same,  $Home_{uv}$  is 1; otherwise, it is 0. A group of control variables called  $A_{uv}$  includes entrepreneur and company-level controls. The fixed effects associated with industry, time, and regions are represented by  $Ind_a$ ,  $Year_v$  appropriately.

Researchers developed the following models 2-4 following Hypotheses 2 and 3:

$$Eco_{uv} = \alpha_0 + \alpha_1 Home_{uv} + \alpha_2 Home_{uv} \times Alertness_{uv} + A_{uv} + Year_v + Ind_a + \epsilon_{uv} \quad (2)$$

A few of them include Institution, which refers to the organizational proportion of shares, *Alertness<sub>uv</sub>*, which refers to market complexity, and the remaining factors, which are the same as those in the definition of Eq. (2).

#### 4. Result and Discussion

The descriptive statistical analysis and correlation analyses are shown in Table 1. Local CEOs make up about 48% of the total study across all surveys. The group had an average of 0.66 green innovations. Table 2 displays the findings of the regression study on the impact of entrepreneur hometown identification on businesses' eco-innovation. Just the three factors are present in Model 1. Researchers include the important variables in Model 2. Hometown is correlated with eco-innovation favorably ( $p = 0.01$ ), which is consistent with Hypothesis 1. According to the estimated outcome in Model 2, companies with hometown Entrepreneurs typically file 39.1% more green patent claims than comparable companies with nonhome town Entrepreneurs. This result has important economic ramifications.

Table 1. Correlation and descriptive variables

Variables	Eco-innovation	Hometown	Company Age	Company Size	Export
Eco-innovation	<b>1</b>				
Hometown	0.009	<b>1</b>			
Company Age	0.07	-0.03	<b>1</b>		
Company Size	0.021	0.03	0.22	<b>1</b>	
Export	0.11	0.05	-0.03	0.04	<b>1</b>
<b>Mean</b>	0.18	28.66	0.95	0.05	0.11
<b>Standard Deviation</b>	2.46	0.52	6.77	1.12	0.50

Using Equations 1 and 2, you examine Hypotheses 2 and 3. According to Model 3, there is an adverse and statistically significant ( $p < 0.1$ ) communication between ownership concentration and entrepreneur hometown identity, which suggests that the ownership concentration of an organization has a deleterious moderating effect on the connection between entrepreneur hometown identity and companies' eco-innovation. As a result, Hypothesis 2 is also confirmed. In Prototype 4, the relationship between the CEO hometown individuality and market depth is substantial and negative ( $p > 0.01$ ). This result corroborates Hypothesis 3 because it indicates that when businesses face a more highly complicated economic climate, the relationship between the entrepreneur's hometown identity and innovation performance becomes stronger.

Table 2. Regression analysis

Variables	Eco-innovation	Hometown	Company Age	Company Size	Export
Eco-innovation		0.276	0.380	0.482	0.565
Hometown			-0.349		-0.326
Institution			-0.668		-0.654
Alertness				0.803	0.589
Company Age	0.005	0.005	0.008	0.008	0.008
Company Size	0.042	0.035	0.01	0.035	0.048
Export	0.107	0.104	0.096	0.098	0.093
Connect	0.159	0.082	0.093	0.074	0.085
Year	X	X	X	X	X
Province	X	X	X	X	X
Industry	X	X	X	X	X
Constant	0.136	0.115	-0.028	0.065	-0.042
Observation	6832	6832	6832	6832	6832
R <sup>2</sup>	0.288	0.287	0.293	0.292	0.294

The next stage was to put the structural equation model to the trial to confirm alertness' mediation function. A complete mediating model is defined by Model 1, our reference model. The base case fit the data reasonably well. Model 1 was approved as a result. Researchers should include a straight route in Model 2. Except for the

addition of two direct pathways Model 3 was similar to Model 1. As a result, Models 2 and 3 contain the guideline model. The findings of the structural model estimate method used to examine the critical effects of the variables suggested by hypotheses H1–H5 are presented in Table 3. The results demonstrate that hypotheses are significantly more favourable to eco-innovation than an entrepreneur.

Table 3. Parameter estimation

Connection	Estimates	t-value	p-value	Supposition	Outcome
<i>H1 → Eco</i>	0.238	4.67	0	Hypothesis 1	Endorsed
<i>H2 → Eco</i>	0.495	6.143	0	Hypothesis 2	Endorsed
<i>H3 → Eco</i>	0.328	5.787	0	Hypothesis 3	Endorsed
<i>H4 → Eco</i>	0.136	2.986	0.02	Hypothesis 4	Endorsed
<i>H5 → Eco</i>	0.158	4.652	0	Hypothesis 5	Endorsed

Initially, researchers find that there is a strong correlation between all Intimation parameters and Eco-innovation. The research highlights the need for potential entrepreneurs for businesses to help protect the environment and have a significant effect on the ecosystem. These findings further emphasize how crucial it is to take advantage of these chances to adopt eco-innovation and promote sustainable development. By locating suitable entrepreneurial prospects for carrying out ecological administration, eco-innovation helps position businesses for higher performance (Lee & Min, 2015). Regarding this, eco-innovation may produce a trying to distinguish strategies focused on enhancing sustainable goods, which may be seen as a chance to boost sales. Additionally, the fundamental idea guiding the connection between the opportunity identification phenomena and Eco-innovation postulates that entrepreneurs use ecological awareness as an innovation capability to reap benefits like cost savings and improved business performance. As a result, these chances foster an awareness of entrepreneurship to participate in the eco-innovation cycle. Entrepreneurs then started assessing the possibilities of eco-innovation in addition to the development of prospects, to preserve efficient and affordable efficiency as well as to safeguard the environment, promote market position, create a new venture, and improve understanding of customer requirements (Scarpellini, Valero-Gil, Moneva, & Andreaus, 2020).

Secondly, researchers discovered a favourable correlation between Entrepreneurial orientation and ecological innovation in the investigation. According to research findings, it is reasonable to infer that Entrepreneurs with more experience will have a better grasp of corporate social accountability expenditures. As an outcome, they are more receptive to environmental problems and more likely to participate in ethical environmental programs. Nevertheless, it has been discovered that Entrepreneurs who are nearing the end of their term or who are later in their profession do not think they would gain from long-term and risky investments since they will most likely be repaid in the long run—possibly beyond their term of office (Pereira & Vence, 2012).

## 5. Conclusion

Entrepreneur hometown identification is an emotional trait of company executives and affects the strategic options made by the company. They restrict the research to the connection between hometown entrepreneurs and businesses' ecological innovation because of a different research emphasis. The impact of corporate managers' hometown identities on other strategy development made by the company, including traditional creativity, ecological information asymmetry, and Sustainability, can be further investigated in future research. Researchers illustrated the following: the importance of obtaining eco-innovation to assign original eco-friendly possibilities and develop creative ideas; the valuation of networks with other businesspeople, organizations, and clients to detect more possibilities and produce more innovative sustainable products; the relevance of the wakefulness level to individuals who score possibilities related to safeguarding the environment and eco-innovation procedures. According to research findings, entrepreneurs rank entrepreneur assistance as the most crucial element in implementing eco-innovations, but they rank entrepreneur knowledge opportunities as less crucial. Thirdly, the study demonstrated that H1, H2, and H3 relationships are mediated by entrepreneur studies. In other words, the hypothesis model improves opportunity awareness, which in turn encourages the perception of entrepreneurs to use eco-innovation methods. To enforce the best eco-innovation practices, in addition, to dealing with the ecological issues of various stakeholders, including the authorities, partner institutions, and buyers, and to relieve ecological issues, together with enhancing their business concepts, researchers recommend that entrepreneurs combine the five variables of affecting the hometown identity of an entrepreneur. Last but not

least, this research might offer proof to future researchers who need to examine the possibility of moderating elements, including risk tendency, to learn more about the entrepreneurial ruling procedure for embracing eco-innovation.

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