UNDERSTANDING THE NEXUS BETWEEN GREEN ENTREPRENEURSHIP AND GREEN ECONOMY: A REVIEW

Agung Purnomo1, Nur Asitah2 Elsa Rosyidah3
1Entrepreneurship Department, Bina Nusantara University, Jakarta
2Basic Education Department, Universitas Negeri Malang, Malang
3Environmental Engineering Department, Universitas Nahdlatul Ulama Sidoarjo, Sidoarjo
Email: agung.purnomo@binus.ac.id

Abstract
The role of green entrepreneurship is sufficient to realize a green economy. This study aims to understand the existing literature and research on green entrepreneurship in the green economy. The literature was reviewed systematically following the PRISMA guidelines for performing and reporting systematic literature reviews. Some reviewed articles were included based on a systematic search of the Scopus database. The research agenda was provided using quantitative, multilevel, and management perspective analysis. Continental Europe has made the most contributions to this field. The developments in green entrepreneurship research in the green economy can be attributed to several factors, such as environmental concern, SDGs, resource efficiency, climate change mitigation, innovation, social inclusion and measurement. Further research can be carried out using the team level by connecting the management perspective of finance, operation and human resource.

Keywords: entrepreneurship; green entrepreneurship; green economy; systematic review

Introduction
Entrepreneurship has been acknowledged as an appropriate method to produce financial gains (Terán-Yépez, Marín-Carrillo, Casado-Belmonte, & Capobianco-Uriarte, 2020). With the current developments, green entrepreneurship has become a trend among business people (Anghel & Anghel, 2022; Purnomo, Firdaus, Rosyidah, Afia, & Firdausi, 2023). In addition, consumer awareness of the environment to buy environmentally friendly products has natural implications for the emergence of green entrepreneurs in the green economy (Lotfi, Yousefi, & Jafari, 2018). There are two types of green entrepreneurs; then the first is environmental goods and services (EGS), such as innovation, ecological mental control, resource conservation, and clean energy. The second is green business (GB), involving private industries actively changing their goods and procedures to advance ecological responsibility (Khanna, 2020). Green entrepreneurs in a green economy aim to succeed in current and future sustainable development. Success if it can meet needs without compromising future generations (Purnomo, Firdaus, Saputra, Teja, & Harjanti, 2021; Terán-Yépez et al., 2020).
The green economy is a progress and growth paradigm shift that can improve people's quality of life, preserve the planet, and achieve greater economic and environmental sustainability (Söderholm, 2020; Zhang, Xu, Chen, Li, & Chen, 2022). A beneficial relationship exists between the green economy's environmental component with green entrepreneurship. Sustainable growth can only be achieved by radically altering people's perceptions of green business practices (Ahmad, Abdul-Halim, Ramayah, & Rahman, 2015; Purnomo, Sari, Aziz, Prasetyo, & Rosyidah, 2021). Green entrepreneurs contribute to the success of the green economy.

Entrepreneurship's contribution to productivity, economic growth, innovation, and job creation has been studied for centuries (van Praag & Versloot, 2007), so business owners must advance their companies. Research related to green entrepreneurs in the green economy is more about community involvement in business (Radović-Marković & Živanović, 2019), building the relationship of entrepreneurs with social and economic systems (Affolderbach & Krueger, 2017), and management systems (J. Willemsen & van der Veen, 2014). However, only some studies use systematic literature reviews to develop green entrepreneurs on green economy science. Researchers must consider this when studying green entrepreneurs in a green economy.

A systematic literature review (SLR) is a reliable evaluation of the body of knowledge on a specific subject or area (Petticrew & Roberts, 2006). Using straightforward and dependable techniques, all relevant studies must be located, assessed, and summarised (Jahan, Naveed, Zeshan, & Tahir, 2016; Snyder, 2019). The protocol is described and provides a paper trail of searching, excluding, including documents, and then analyzing them (Jones, Coviello, & Tang, 2011). SLRs strive to collect as much current evidence-based research on the subject under study as possible, regardless of source (Thorpe, Holt, Macpherson, & Pittaway, 2005). SLRs are notable for their propensity to produce robust reviews of evidence rigorous, as they require various methods that reduce inaccuracies and biases (Tranfield, Denyer, & Smart, 2003). This study aims to conduct a systematic literature review of existing literature and research on green entrepreneurship in a green economy.

Research Methods

This study followed the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines to conduct a systematic literature review (PRISMA, 2022). This study subjected a comprehensive literature database to a systematic literature review (SLR) (Purnomo et al., 2022).

This study has linked relevant keywords to green entrepreneurship and green economy research to identify and associate relevant articles from the Scopus database. Academics consider Scopus a reliable source of scholarly papers, so it was used as the main source of information (Purnomo et al., 2022). As shown in Figure 1, this study used the keywords "green entrepreneurship" and "green economy" from the author's title, abstract, and keywords to retrieve pertinent data from the Scopus database. The data mining was limited to annual data to compile all released data for a year. As of
October 2022, the search query option used for data mining was (TITLE-ABS-KEY ("green entrepreneurship") AND TITLE-ABS-KEY ("green econom*") AND PUBYEAR 2022. We found 24 articles during this phase. Inclusion criteria (IC) used in research include topic, full text accessed and year.

This SLR quantitatively analyzes annual publications, affiliation, and geographic contexts. In addition, multilevel analysis and perspective analysis were also utilized in this study. This research investigates several management perspectives, including human resources, entrepreneurship, marketing, operations, finance, and strategy. The multilevel analysis included taking into various factors at the individual, team, firm, network, and institutional levels (Andreini & Bettinelli, 2017).

**Result and Discussion**

This part discusses the status of existing quantitative, multilevel, and perspective-based research and literature in green entrepreneurship within the green economy.

**Annual Publications**

Figure 2 displays twenty-four documents that were published annually. According to these stats, there have been an increasing number of publications about green entrepreneurship in the green economy. Since 2021 was the year of economic recovery following the COVID-19 pandemic, much research has been devoted to the concept (Sharma, Bouchaud, Gualdi, Tarzia, & Zamponi, 2021; Wang & Zhang, 2021; Xiang, Tang, Yin, Zheng, & Lu, 2021). The peak of the publication of green entrepreneurship on green economy occurred in 2020.
Understanding the Nexus between Green Entrepreneurship and Green Economy: A Review

![Graph showing annual publications](image)

**Figure 2 The green entrepreneurship in the green economy sector's annual publications**

The developments in green entrepreneurship and green economy research can be attributed to several factors, such as environmental concern, SDGs, resource efficiency, climate change mitigation, innovation, social inclusion and measurement. First, the increasingly serious problems related to the ecological environment have raised awareness about the need for sustainable practices and solutions. Green entrepreneurship and green economy align with addressing environmental challenges and promoting sustainable development (Huang, Zhang, Liu, & Tu, 2022). Second, green entrepreneurship and the economy are closely linked to the United Nations' Sustainable Development Goals (SDGs). Green entrepreneurship and green economy aim to improve human well-being and social equity while significantly reducing environmental risks and ecological scarcity. Third, green entrepreneurship and economy emphasize resource efficiency, including energy and resource use efficiency, circular economy practices, and preventing biodiversity loss and ecological services (Michael, 2022).

Fourth, the transition to green entrepreneurship and a green economy is driven by the need to address climate change. It involves developing low-carbon solutions, reducing carbon emissions, and promoting renewable energy sources (Michael, 2022). Fifth, green entrepreneurship and the green economy rely on innovation and technology to develop sustainable solutions. This includes green technology innovation, energy efficiency, and developing policy systems to support the green economy (Huang et al., 2022). Sixth, green entrepreneurship and economy aim to be socially inclusive, promoting equitable access to resources and opportunities. It seeks to improve rural livelihoods and contribute to sustainable development in entrepreneurship sectors such as agriculture, forestry, and fisheries (Michael, 2022). Seventh, research is crucial in understanding and measuring green entrepreneurship and economic development. Studies focus on evaluating the impact of green economy initiatives, developing measurement frameworks, and assessing the costs and benefits of environmental management (Chunyu, 2021).
Author’s institutional affiliation

There were 24 articles affiliated with 54 research organizations. The most productive institution researching green entrepreneurship in green economy publications was the University of Hull, United Kingdom (n = 3), as shown in Table 1, then followed by The University of South Africa, South Africa, and Bucharest University of Economic Studies, Romania (n = 2).

<table>
<thead>
<tr>
<th>Affiliation</th>
<th>Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>“University of Hull”</td>
<td>3</td>
</tr>
<tr>
<td>“The University of South Africa” and</td>
<td>2</td>
</tr>
<tr>
<td>“Bucharest University of Economic Studies”</td>
<td></td>
</tr>
</tbody>
</table>

Although the United Kingdom had the most prolific publications, the United States had the most. The University of Hull has received £86 million in funding to invest in sustainable facilities and infrastructure to achieve carbon neutrality by 2027 (Farrell, 2022). This campus strongly supports sustainable development, so research on green entrepreneurs in the green economy immensely helped.

Geographical Contexts

Twenty different countries were represented in the paper's total of 24 articles. Research on green entrepreneurship in the green economy was conducted primarily in Europe (Table 2). The research, which was conducted in Europe, consisted of 17 articles, of which six documents came from the United Kingdom, while one came from Romania, Italy, Croatia, Latvia, Netherlands, Serbia, Spain, and Ukraine. Asia was the second continent to contribute to this topic. The country that published the most on this theme was China, Malaysia, and Saudi Arabia.

The European region has conducted the most research on green entrepreneurship in the green economy for several reasons, such as awareness and attitude, supportive environment, education and knowledge. First, there is a growing awareness and positive attitude towards the principles and priorities of a circular economy, green economy and sustainable practices among young people in Europe (Krajnc, Kovačič, Žunec, Brglez, & Kovačič Lukman, 2022). This awareness motivates them to engage in entrepreneurial activities that align with the goals of the European Green Deal (Foncubierta-Rodríguez, 2022). Second, European countries have implemented policies and initiatives that support green entrepreneurship and the transition to a green economy. These include funding programs, incubators, and accelerators targeting green startups. Third, while formal education may not provide enough knowledge to work in the green economy field actively, there is a recognition of the need to encourage young people's competence and ability to deal with the green economy. This emphasis on education and knowledge development creates a favourable environment for green entrepreneurship research (Krajnc et al., 2022).
Understanding the Nexus between Green Entrepreneurship and Green Economy: A Review

### Table 2  Geographical contexts of green entrepreneurship in green economy studies

<table>
<thead>
<tr>
<th>Countries</th>
<th>Papers</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>America</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Colombia</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>United States</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Asia</strong></td>
<td>9</td>
<td><strong>26</strong></td>
</tr>
<tr>
<td>China</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Iran</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Pakistan</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Russian Federation</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Europe</strong></td>
<td>17</td>
<td><strong>50</strong></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>6</td>
<td>18</td>
</tr>
<tr>
<td>Romania</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Italy</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Croatia</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Latvia</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Serbia</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Ukraine</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>African</strong></td>
<td>4</td>
<td><strong>12</strong></td>
</tr>
<tr>
<td>South Africa</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>1</td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>24</td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Management Perspective Analysis and Multilevel Analysis**

Based on our analysis of 24 documents, we can categorize them into five distinct levels of analysis, as shown in Table 3. These five levels of analysis were individual, team, firm, networking, and institutional. Because individuals do not operate in isolation, various study layers were required to comprehend the dynamics within companies in green entrepreneurship in the green economy. In this case, the individuals are business owners, entrepreneurs, and employees. Individuals influence and influence their respective environments, such as networks, teams, contexts, and businesses that exist in their environment (Andreini & Bettinelli, 2017).
### Table 3 Various levels and perspectives of analysis

<table>
<thead>
<tr>
<th>Analysis of Management Perspective and Multilevel</th>
<th>Individual</th>
<th>Team</th>
<th>Firm</th>
<th>Network</th>
<th>Institutional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>-</td>
<td>-</td>
<td>(Radović-Marković &amp; Živanović, 2019)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Marketing</td>
<td>(Ye, Zhou, Anwar, Siddiquei, &amp; Asmi, 2020)</td>
<td>-</td>
<td>-</td>
<td>(Mukonza, 2020)</td>
<td>(J. Willemsen &amp; van der Veen, 2014)</td>
</tr>
<tr>
<td>Operation</td>
<td>-</td>
<td>(Gibbs &amp; O’Neill, 2014)</td>
<td>(Drăgoi et al., 2017; Webb, 2021)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Human resource</td>
<td>(O’Neill &amp; Gibbs, 2016; Petrović, Peternel, &amp; Ančić, 2020; Soomro, Ghumro, &amp; Shah, 2020)</td>
<td>-</td>
<td>-</td>
<td>(Maziriri, Mapuranga, Maramura, &amp; Nzewi, 2019)</td>
<td>-</td>
</tr>
<tr>
<td>Strategic</td>
<td>(Affolderbach &amp; Krueger, 2017; Pertuz, Miranda, &amp; Sánchez Buitrago, 2021)</td>
<td>-</td>
<td>(Bobkova, Andreyeva, Verbivská, Kozlovteva, &amp; Velychko, 2021; Demirel, Li, Rentocchini, &amp; Tamvada, 2021)</td>
<td>-</td>
<td>(Alwakid et al., 2021; Todirica, 2018)</td>
</tr>
</tbody>
</table>
Research on perception, learning, cognition, creativity, motivation, personality, behaviour, and ethics is typically conducted at the individual level of analysis. The individual-level analysis is frequently used in research on ethics, deviant behaviour, cooperative behaviour, learning, personality, perception, motivation, cognition, and creativity. This analysis emphasizes psychology and entrepreneurship theories (Ostroff & Judge, 2012).

Research on group dynamics, norms, power, roles, leadership, intragroup and intergroup conflict and cohesion, and interpersonal communication was done at the team-level analysis (Molloy, Ployhart, & Wright, 2011). Scholars typically employ socio-psychological and sociological methodologies at this level of study.

Firm-level research was conducted on technology, change, inter-organizational cooperation, firm culture, conflict, structure, cultural diversity, and external environmental variables (Foss & Saebi, 2015). Social interaction, collaboration, cooperation, collective action, relationships, connectedness, and trust were all included at the network level of analysis.

The cultural-cognitive, normative, and regulative institutions identified as the three pillars of institutions were typically partially addressed by research at the institutional level analysis (Scott, 1995). The regulative pillar focuses on the enforcing body and explicit regulatory mechanisms, including rule-setting, monitoring, and penalizing actions that compel businesses to abide by the rules. The normative pillar focuses on the rules and standards that people adhere to because of a sense of duty to others and because they are expected to do so. The cultural-cognitive pillar emphasizes common understanding and how people react to cultural cues in their environment.

Based on the 24 papers analyzed, the analysis of entrepreneurship focus was found at almost all levels except in the field of teams. The green entrepreneurship ecosystem must be seen from the macro and micro levels with crucial elements (Diale et al., 2019).

Studies also analyze using a management perspective, such as finance, strategy, human resource, entrepreneurship, operation, and marketing (Andreini & Bettinelli, 2017). Regarding the focus on finance management, researchers only found it at the firm level. The study discovered a financing gap between what the banking industry was ready to offer green entrepreneurs in the green economy sector and what they required (Radović-Marković & Živanović, 2019).

On the focus of marketing management, researchers found it at the individual, team, and institutional levels. The most significant influence on a person's intentions to
Agung Purnomo¹, Nur Asitah², Elsa Rosyidah³

engage in environmentally responsible entrepreneurship, according to the findings of a recent study. In contrast, the interaction between mooring factors and market orientation on switching to green entrepreneurship was relatively weak (Ye et al., 2020). The focus of operations management was only found at the team and firm levels. The number of agrotourism business units is positively impacted by economic variables (Drăgoi et al., 2017).

Individual and network levels were found in the focus area of human resources. Researchers found four studies involving survey results in green entrepreneurship on green economy studies (Maziriri et al., 2019; O’Neill & Gibbs, 2016; Petrović et al., 2020; Soomro et al., 2020). Moreover, the last strategic focus was on the individual, firm, and institutional levels. The field's strategic direction becomes the focus, with the highest number of people in business having the right strategy for green entrepreneurship to realize a green economy. Green entrepreneurship is a tool for delivering potentially broader system change and exploring green development's conceptual and practical aspects (Affolderbach & Krueger, 2017). The industry life cycle, the abundance of knowledge, organizations, and financing access are critical to the success of green entrepreneurship in a green economy (Demirel et al., 2019).

There are several research gaps in green entrepreneurship in a green economy. First, the entrepreneurship perspective research has not been linked to team analysis. Second, the finance management perspective study has not been linked to individual, team, network and institutional analysis. Third, marketing management perspective research is unrelated to team and firm analysis. Fourth, the operation management perspective study has not been linked to individual, network and institutional analysis. Fifth, research on the human resource management perspective has not been linked to team, firm and institutional analysis. Sixth, strategic management perspective studies are unrelated to team and network analysis. The team level is the least researched multilevel analysis for green entrepreneurship in a green economy. Management perspectives that have been little studied for green entrepreneurship in a green economy are operations, human resources and finance.

Conclusion

The role of green entrepreneurship is sufficient to realize a green economy. This study investigates the distribution of related research by presenting several quantitative analyses relating to green entrepreneurship and green economy, such as annual publication, country, and affiliation. The developments in green entrepreneurship research in the green economy can be attributed to several factors, such as environmental concern, SDGs, resource efficiency, climate change mitigation, innovation, social inclusion and measurement. The study's findings indicate that green entrepreneurship in the green economy has been studied in numerous research institutes and several countries. The University of Hull and continental Europe have contributed most to this field as a research institution and country. The annual analysis demonstrates that research in the area has stabilized since 2014, with the management perspective of
entrepreneurship, marketing, and strategy being the most researched and linked topic. This topic's most frequently reviewed multilevel analysis was the individual and firm level. This study has limitations using data only from Scopus.

Further research that can be carried out, especially for green entrepreneur research in the green economy, is to use the team level by connecting the management perspective of the finance, operation and human resource. Some future research can be carried out in comparative studies on the differences in the characteristics of green entrepreneurship between different countries around the world and business strategies that can help green entrepreneurship to survive in the long term based on a green economy.
REFERENCES


Understanding the Nexus between Green Entrepreneurship and Green Economy: A Review


2481


Understanding the Nexus between Green Entrepreneurship and Green Economy: A Review


Agung Purnomo¹, Nur Asitah², Elsa Rosyidah³


