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## Human Resource Competency Development as an Environmentally Friendly Entrepreneurship Strategy in MSME Cafés in Ermera, Timor-Leste (A Conceptual Study)

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**Abstract:** This article aims to analyze human resource (HR) competency development as a strategy for realizing environmentally friendly entrepreneurship in MSME cafés in Ermera Regency, Timor-Leste. This study is conceptual in nature, examining various theories and current empirical findings related to HR competency, sustainable entrepreneurship, and environmentally friendly business practices in the MSME sector. HR competency development is seen as an important foundation for MSMEs in adopting green entrepreneurial behavior, including innovation capabilities, environmental knowledge, sustainable attitudes, and managerial skills that support resource efficiency. This study found that structured HR competency can encourage the emergence of environmentally friendly entrepreneurial strategies, such as waste reduction, efficient energy use, environmentally friendly product innovation, and strengthening the image of green businesses. Through conceptual analysis and theoretical integration, this article offers a conceptual model that explains the relationship between HR competency development and environmentally friendly entrepreneurial strategies in the context of MSME cafés. Theoretically, this study enriches the literature related to green entrepreneurship, while practically, it provides an overview for MSMEs, local governments, and supporting institutions to design HR development programs that are more oriented towards sustainability.

**Keyword:** Human Resources Competence, Environmentally Friendly Entrepreneurship, UMKM Café, Sustainability, Conceptual Study

## INTRODUCTION

Sustainability issues have become a global concern in the past two decades due to the increasing impacts of climate change, environmental degradation, and uncontrolled resource consumption. Various studies show that the MSME sector is a significant contributor to the global carbon footprint due to inefficient production and consumption practices, including in

the food and beverage sector (OECD, 2020). In the context of developing countries, MSMEs face pressure to transform towards more environmentally friendly business practices to survive amidst changing regulations and increasingly sustainability-conscious consumer preferences (Dangelico & Pujari, 2020). This trend is also evident in Southeast Asia, including Timor-Leste, where the café industry has become a rapidly growing sector due to increasing mobility and changing urban lifestyles.

In Ermera Regency, MSMEs in the café sector play a strategic role in the local economy. However, most business owners have yet to implement environmentally friendly entrepreneurship principles due to limited knowledge, low environmental literacy, and a lack of sustainable managerial skills. Yet, various studies have shown that environmentally friendly practices in café businesses, such as reducing organic waste, saving energy, using biodegradable packaging, and utilizing sustainable local materials, have a positive impact on long-term competitiveness (Irani et al., 2021; Wijethilake, 2017). Modern consumers increasingly demand transparency about green practices implemented by businesses, so MSMEs that fail to adopt these practices risk losing market trust (Rahman & Barua, 2022). This situation emphasizes that business development is inseparable from the ability of human resources to understand environmental issues and translate them into business strategies.

Human resource competency development is a crucial element in supporting the transformation of MSMEs toward environmentally friendly entrepreneurship. Human resource competency encompasses a combination of knowledge, skills, values, and motivation that drives individuals to act effectively in a work context (Boyatzis, 2018). In the context of sustainability, these competencies relate to the ability to understand environmental issues, embrace green innovation, embrace ecologically based problem-solving, and commit to a sustainable work culture (Agyeman et al., 2020). Empirical research shows that human resources with environmental competencies are better able to develop green innovation, manage waste efficiently, and integrate sustainability values into business processes (Singh & Kumar, 2021; Chen et al., 2020). This means that human resource competency development is not merely a technical requirement but also a core strategy for driving the transformation toward green entrepreneurship.

At the same time, the literature on green entrepreneurship continues to grow, highlighting the importance of green innovation, sustainability orientation, and ethical commitment to long-term economic development (Gast et al., 2017). However, many studies place macro factors such as government policies, funding, and green technology as the primary drivers of green entrepreneurship success (Nugroho et al., 2023). Meanwhile, micro aspects related to human resource capacity, including environmental competency and innovation, have received less attention. Yet, recent research confirms that the transformation towards a sustainable business model depends on the quality of the people managing the business, not just external factors (Hahn et al., 2022). This gap suggests the need for studies that more specifically link human resource competency development to green entrepreneurship strategies, particularly in the context of MSME cafés.

Furthermore, most previous research has focused on developed countries or the manufacturing sector, while studies in the context of MSME cafés in rural areas of developing countries are still very limited (Simões & Marques, 2021). Furthermore, the literature integrating HR competency theory and green entrepreneurship models is still predominantly empirical, rather than conceptual. This indicates a research gap in the lack of conceptual models that comprehensively explain the mechanisms by which HR competency development can influence green entrepreneurial strategies. Therefore, conceptual studies are crucial to fill this gap and provide a theoretical foundation for further research.

Based on these conditions, this article aims to formulate a conceptual model that integrates human resource competency development with environmentally friendly

entrepreneurial strategies in MSME cafés in Ermera Regency, Timor-Leste. This article provides a theoretical contribution to enriching the green entrepreneurship literature through an in-depth analysis of the role of human resource competencies as a key factor in implementing sustainable business practices. Practically, this study serves as a reference for MSMEs, local governments, and supporting institutions in designing human resource capacity building programs that are responsive to environmental issues and relevant to the growing café sector.

## **METHOD**

This article uses a conceptual research approach that aims to develop a theoretical understanding of the relationship between human resource competency development and environmentally friendly entrepreneurship strategies in MSME cafés in Ermera Regency, Timor-Leste. A conceptual study was chosen because this type of research focuses on the integration, analysis, and synthesis of various theories, models, and empirical findings to build new perspectives or strengthen existing conceptual frameworks (Jaakkola, 2020). This study does not collect field data, but rather relies on an in-depth literature review of relevant scientific publications over the past ten years (2015–2025), which includes reputable journals, academic books, international organization reports, and previous research results related to human resource competencies, green innovation, and green entrepreneurship.

The literature collection process was conducted by reviewing scientific sources through databases such as Google Scholar, Scopus, and ScienceDirect. The literature review technique followed the principles of an integrative literature review, namely combining theory and empirical findings to identify patterns, relationships, and unanswered research gaps (Snyder, 2019). Literature analysis was conducted thematically by classifying research results into several main categories, namely: (1) HR competency theory, (2) environmental competency and green innovation studies, (3) environmentally friendly entrepreneurship theory, and (4) empirical findings regarding sustainability practices in MSMEs. This process enabled researchers to establish conceptual relationships between variables and formulate relevant conceptual models.

Furthermore, conceptual validity is strengthened by applying a theory-driven analysis approach, which formulates relationships between variables based on systematic scientific arguments and is supported by the results of recent research (MacInnis, 2019). With this approach, the article not only elaborates on existing theories but also develops a new synthesis that can serve as a foundation for further empirical research. The final result of this method is a conceptual model that explains how human resource competency development can influence environmentally friendly entrepreneurial strategies in MSME cafés, while also offering new directions for research and practice in the field of sustainable entrepreneurship.

## **RESULT AND DISCUSSION**

### **Results**

#### **Human Resources (HR) Competence**

Human resource competencies are a set of knowledge, skills, and behaviors that individuals must possess to effectively perform tasks according to organizational demands. According to Boyatzis (2018), competencies reflect personal characteristics that predict superior performance and serve as the foundation for developing quality public services. Competencies are crucial because employees' ability to understand tasks, master procedures, and complete work professionally will determine the organization's effectiveness in achieving its goals (Noe et al., 2021).

Furthermore, HR competency encompasses not only technical skills but also behavioral aspects such as communication, collaboration, and understanding the needs of the community as service recipients. This aligns with Armstrong and Taylor's (2020) perspective, which explains that competency is an integration of knowledge, skills, and attitudes/behavioral characteristics that directly influence the quality of employee performance. In the context of public sector organizations, strong competency will strengthen professionalism, ensure consistency in service delivery, and enhance public trust (Purwanto & Hermanto, 2020).

In the modern workplace, human resource competency is also influenced by the ability to adapt to regulations, technology, and the dynamics of public service needs. According to Sedarmayanti (2018), government employee competency must include technical administrative skills, an understanding of service procedures, and proficiency in using information systems. Therefore, organizations need to ensure that employees receive adequate training to continuously improve their competency (Wibowo, 2020).

Based on modern competency theory (Armstrong & Taylor, 2020; Boyatzis, 2018), as well as empirical research over the past 10 years, the HR competency indicators in this study include:

1. Job Knowledge  
Reflects employee understanding of tasks, SOPs, regulations, and service processes. Employees with good job knowledge are able to carry out tasks effectively and reduce procedural errors (Armstrong & Taylor, 2020; Noe et al., 2021).
2. Technical Skills  
The ability of employees to operate tools, technology, service applications, and carry out technical tasks according to public service needs (Sedarmayanti, 2018; Wibowo, 2020).
3. Interpersonal Skills  
The ability to communicate, cooperate, maintain relationships with the community, and solve problems effectively (Purwanto & Hermanto, 2020; Boyatzis, 2018).
4. Professional Attitude  
Related to discipline, responsibility, work ethics, and integrity in providing services (Armstrong & Taylor, 2020; Wibowo, 2020).
5. Adaptability  
The ability to adapt to policy changes, new technologies, and the dynamics of community needs (Noe et al., 2021; Boyatzis, 2018).

### **Environmentally Friendly Entrepreneurship**

Green entrepreneurship is an entrepreneurial concept that integrates economic goals with a concern for environmental sustainability. This concept focuses on creating added value through innovation while minimizing negative impacts on the environment. According to Gast et al. (2017), green entrepreneurship is an entrepreneurial activity that produces products, processes, or services oriented towards solving environmental problems through sustainable innovation. Therefore, entrepreneurs not only pursue financial gain but also contribute to improving environmental quality.

From the perspective of organizational behavior and strategic management, green entrepreneurship emerges in response to increasing social pressure, changing consumer preferences, and government regulations regarding environmental protection. Schaltegger and Wagner (2017) explain that "green" entrepreneurs have a dual orientation: promoting environmental sustainability and ensuring long-term business sustainability. This suggests that green entrepreneurship requires business owners to understand environmentally friendly technologies, utilize renewable energy, and apply circular economy principles to business processes.

Furthermore, eco-friendly entrepreneurship is also influenced by the business owner's personal motivations, such as concern for climate change, business ethics, and a desire to reduce the business's carbon footprint. According to Omisakin et al. (2020), MSMEs with a sustainability orientation are better able to create green innovations, minimize waste, and increase product added value. Therefore, the success of green entrepreneurship is largely determined by the entrepreneur's eco-innovation, sustainability orientation, and pro-environmental behavior.

In the context of small and medium enterprises, strengthening environmentally friendly entrepreneurship has a significant impact on competitive advantage and business image. Karyani and Widiastuti (2022) emphasized that implementing environmentally friendly principles such as the use of natural raw materials, waste management, and energy efficiency can increase consumer trust, particularly in an era of increasing environmental awareness. Thus, environmentally friendly entrepreneurship can be seen as a comprehensive strategy to strengthen business sustainability while supporting environmental conservation efforts.

Based on recent literature (Gast et al., 2017; Omisakin et al., 2020; Karyani & Widiastuti, 2022), indicators of environmentally friendly entrepreneurship can be formulated as follows:

1. Green Innovation

Includes efforts to develop products, processes, or technologies that reduce environmental impacts (Gast et al., 2017; Omisakin et al., 2020).

2. Sustainable Resource Use

Use of environmentally friendly raw materials, waste reduction, energy efficiency, and efforts to minimize pollution (Schaltegger & Wagner, 2017; Karyani & Widiastuti, 2022).

3. Environmental Orientation

Business owners' commitment to maintaining environmental balance, concern for the ecosystem, and awareness of sustainability issues (Omisakin et al., 2020; Gast et al., 2017).

4. Environmental Management Practices

Implementation of business policies or procedures that support sustainability, such as waste management, recycling, and operational efficiency (Karyani & Widiastuti, 2022; Schaltegger & Wagner, 2017).

5. Environmental Compliance

Business compliance with environmental standards, green business permits, and regulations related to environmental protection (Omisakin et al., 2020).

## Discussion

Human resource competency development is a crucial foundation for strengthening environmentally friendly entrepreneurial strategies in MSME cafés in Ermera, Timor-Leste. Human resource competencies, encompassing knowledge, technical skills, cognitive abilities, and personal values, have been shown to influence entrepreneurs' ability to design and implement sustainable business practices. According to Boyatzis (2018), competencies are characteristics that underlie superior performance, including the ability to understand complex problems and make strategic decisions. When these competencies are directed toward sustainability values, MSMEs are more likely to internalize pro-environmental behaviors in their business activities. This finding is supported by research by Del Giudice et al. (2020), which shows that knowledge-based competencies drive green innovation capabilities in MSMEs.

Furthermore, the environmental knowledge possessed by entrepreneurs influences the extent to which they can identify opportunities to reduce the negative impact of business activities on the environment. According to Liu & Lin (2017), the level of environmental



literacy determines the quality of business decisions regarding raw material selection, waste management, and the adoption of more environmentally friendly technologies. This means that the higher an entrepreneur's environmental knowledge, the more likely they are to implement green entrepreneurship strategies. In the context of MSME cafes, which frequently produce organic and inorganic waste, environmental competence is a key requirement to ensure business processes operate with a sustainable approach.

Technical skills and innovation also play a significant role in creating green business opportunities. Based on a study by Gast et al. (2017), sustainable innovation (eco-innovation) can only be achieved if business actors possess the technical competencies that support the development of environmentally friendly products. This aligns with research by Ollo-López & Aramendia-Muneta (2020), which found that innovation competency and digital capabilities facilitate the adoption of green technology by MSMEs, increase energy efficiency, and manage waste in a modern way. Therefore, technical competency in human resources serves not only as an operational capability but also as a catalyst in the transformation towards sustainable business.

Entrepreneurs' intrinsic motivation and value orientation toward sustainability also play a significant role. Research by Omisakin et al. (2020) shows that entrepreneurs with environmental concerns tend to be more proactive in implementing environmentally friendly practices, even without regulatory pressure. A strong environmental orientation encourages MSME café operators in Ermera to implement measures such as reducing plastic waste, utilizing sustainable local raw materials, and developing sustainability-based menus. Similarly, Karyani & Widiastuti (2022) emphasize that a sustainability orientation contributes to competitive advantage and improved business image, particularly among younger consumers who are more concerned about environmental issues.

This study also identified a significant research gap: MSMEs in developing countries, including Timor-Leste, tend to have limited human resource competencies in sustainability management. A study by Singh et al. (2021) showed that most MSMEs in Southeast Asia still lack the capacity to implement green business models due to low green technology literacy and an inability to access formal training. This gap is particularly relevant to the situation of MSME cafes in Ermera, most of which still operate traditionally and lack adequate knowledge of waste management, energy efficiency, or green innovation.

In addition to internal human resource factors, the institutional environment also influences the relationship between human resource competencies and green entrepreneurship. According to Schaltegger & Wagner (2017), green entrepreneurship will develop more rapidly when business actors possess competencies aligned with regulatory support, a green business ecosystem, and government policies. However, research by Tavares & Sousa (2023) found that developing countries face challenges in the form of environmental policy uncertainty and minimal formal training support for MSMEs. This reinforces the urgency of developing sustainability-based human resource competencies in Ermera as an adaptive strategy in a still-developing institutional environment.

Overall, the results of this study confirm that developing human resource competencies not only strengthens individual capacity but also contributes to the development of a greener and more sustainable MSME ecosystem. Competence is a key prerequisite for MSME café operators to understand environmental issues, implement environmentally friendly innovations, and build business models capable of addressing global demands and changing consumer preferences. Therefore, strengthening human resource competencies is a strategic strategy that not only improves the quality of environmentally friendly entrepreneurship but also strengthens the long-term competitiveness of MSMEs in the Ermera region.

## Implications of Study Results

The results of this study contribute to theory development by demonstrating that human resource competencies and environmentally friendly entrepreneurship play a significant role in improving business performance. These findings reinforce previous theories that environmentally friendly knowledge, skills, and attitudes are essential foundations for business sustainability. Furthermore, this study reaffirms that environmentally conscious business behavior can provide a competitive advantage for MSMEs in the current era.

Practically, this research provides input to MSMEs to focus on improving human resource capabilities, particularly through training, mentoring, and job skills enhancement. Furthermore, the research findings emphasize the importance of adopting more environmentally friendly entrepreneurial practices, such as waste management, energy efficiency, and the use of more environmentally friendly materials. These steps not only improve business performance but also boost consumer confidence, which is increasingly concerned about environmental issues.

By referring to theoretical studies both empirically and conceptually, as well as discussions of the relationship between variables, the framework for thinking in this article is compiled as shown below.

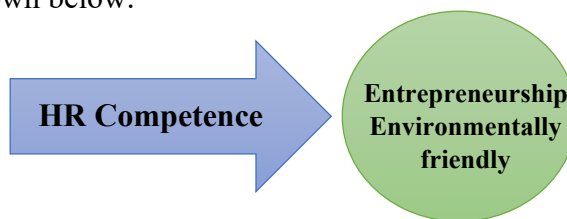


Figure 1. Conceptual Framework

The conceptual framework in this study is built on the assumption that human resource competency is the main foundation that drives the emergence of environmentally friendly entrepreneurial practices in MSME cafés in Ermera. Human resource competency, which includes knowledge, skills, and attitudes, is believed to shape individuals' ability to understand the importance of sustainability and implement more environmentally conscious business practices. A workforce with high competency is not only able to run business operations effectively, but also tends to be more innovative in implementing waste management strategies, energy efficiency, and the use of environmentally friendly materials as part of green entrepreneurship practices. Thus, the better the competency of human resources, the greater their potential to encourage MSMEs to adopt sustainability-oriented entrepreneurial behavior. This conceptual framework confirms the relationship between human resource competency and the development of environmentally friendly entrepreneurship, which ultimately becomes an important strategy for MSME cafés in increasing competitiveness while maintaining environmental sustainability.

## CONCLUSION

This study confirms that human resource competency is a strategic foundation in encouraging the strengthening of environmentally friendly entrepreneurship in MSME cafés in Ermera, Timor-Leste. Competency, consisting of aspects of knowledge, skills, and attitudes, is a crucial factor influencing the ability of MSME actors to understand sustainability issues and implement more ecological business practices. Through competency strengthening, human resources can be more responsive to the demands of changing business environments, able to manage resources efficiently, and produce environmentally friendly innovations that support business sustainability. Thus, this study concludes that improving human resource competency is not only an internal organizational need but also a key

strategy in encouraging the transformation of MSMEs towards sustainable and competitive entrepreneurial practices.

This study has several limitations. First, it is a conceptual study, so the arguments developed rely heavily on a synthesis of previous theories and empirical findings, rather than on direct field data. This limits the generalizability of the results and requires further empirical verification. Second, this study focuses only on two main variables: human resource competency and green entrepreneurship. Therefore, it does not consider other factors such as organizational culture, government support, access to financing, or consumer pressure, which may play a role in strengthening green entrepreneurship practices in MSMEs. Third, the research context is limited to MSME cafés in Ermera, so its application may differ if adapted to other types of businesses or regions with different social, economic, and ecological characteristics. Therefore, further research is recommended to conduct empirical testing, expand the variables observed, and consider differences in local contexts to obtain more comprehensive results.

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