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**ECO-AGROPRENEURSHIP IN EASTERN
INDONESIAN COASTAL AREA**

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ECO-AGROPRENEURSHIP IN EASTERN INDONESIAN COASTAL AREA

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1. INTRODUCTION

Indonesia has a large coastal area and abundant natural resources. Indonesia has 17,504 islands with a land area of 1.9 million km² and freshwater covering 27 percent (0.54 million km²). There are 100.8 million hectares of agricultural land available, whereas only 68.8 million hectares are used. Indonesia is the 16th largest economy in the world, according to World Bank data (2021), based on the GDP indicator. These are why Indonesia became a G20 member and has revoked its status as a developing country. However, according to several parameters, Indonesia must still be classified as a developed country. The human development indexes such as poverty rate, infant mortality, adult literacy, life expectancy, and education remain low. Most Indonesian farmers still use traditional methods in the agricultural sector, unlike developed countries that use high technology, such as industry 4.0 technology (Kindangen et al., 2019; Tuegeh et al., 2021; Tumiwa et al., 2022).

Indonesia joined the ASEAN Economic Community (AEC) to maintain economic growth. AEC is an effort to create free competition and trade among developing countries in Southeast Asia that will bring threats and opportunities (Paruntu & Tumiwa, 2016; Tumiwa & Paruntu, 2017). Another bilateral agreement is cooperation with other countries such as Hungary (Ministry of Foreign Affairs of The Republic of Indonesia, 2021). The collaboration between Indonesia and Hungary includes a clean water scheme for 36 locations in 12 provinces in Indonesia; the scholarship for Indonesian students; simplifying the Hungarian visa process for Indonesian citizens; collaboration in sports by facilitating the training of Indonesian soccer players in Hungary; building military, cancer therapy, and oncology hospitals; and joint investment such as high-way management payment in Indonesia. Indonesia also exports products to Hungary, such as office/printing machines, coffee, cocoa, and rubber, with total trade reaching 120.97 million USD. This collaboration is essential because Hungary's strategic location links Central and Eastern Europe as a vital market and entry point for Indonesian products. Indonesia also becomes the entry for Hungarian products in the ASEAN market (Tumiwa et al., 2020).

As mentioned earlier, the trade issue brings threads and opportunities that necessitate a factor of production in order to drive economic growth. According to Klein (1988), entrepreneurship is a factor of production. This concept is stems from the phrase by Samuelson (1948) as an evil of monopoly. Entrepreneurship closely related to small start-up business (Parker, 2005; Storey & Greene, 2010). Small business is an essential indicator of economic growth as a backbone of national GDP and employment (Chonsawat & Sopadang, 2020; Gallis, 2010; Karadag, 2016; Tumiwa & Nagy, 2021). Job creation via

small businesses helps the poor, particularly women and juveniles, alleviate poverty, raise income, and affect household investment in schooling and healthiness (Kindangen et al., 2019; Oyelana & Adu, 2015). One of the essential characteristics of a small business is its adaptation agility, which directly impacts local communities, especially during the Indonesian economic crisis in 1998 (Berry et al., 2001; Sadli, 2015) and the financial crisis in 2008 (Sangsubhan & Basri, 2012). Micro, small, and medium-sized enterprises (MSMEs) are small businesses in Indonesia. MSMEs are crucial to the inclusive development strategy because they bring large corporations into the community, allowing for economic equality at all levels of society (Van Tulder & Da Rosa, 2014). MSMEs are essential in supporting broader socio-economic goals, including achieving the Sustainable Development Goals (SDGs) as a top priority (Abers et al., 2017; Gupta & Vegelin, 2016).

Currently, besides international trade, MSMEs face a global pandemic of COVID-19 that significantly impacts the national economy (Alraja et al., 2022), especially the tourism sector in the coastal area (Hidayatullah et al., 2020). However, the government's decision to halt COVID-19 put additional strain on MSMEs, resulting in obstructed distribution channels, decreased production, more infrequent tourists, and layoffs, resulting in an economic downturn (Nagy et al., 2022; Tumiwa et al., 2022). Recently, the Russian and Ukraine Conflict - abbreviated R-YouC (read: Are-You-See) in this dissertation - has caused shortages in all sectors in every country, including Indonesia. As a result of the current situation, MSMEs must improve their performance in order to respond to various challenges.

The COVID-19 pandemics and R-YouC have adversely hit the economy, such as scarcity of energy, raw materials, and the availability of labor, especially in MSMEs in coastal areas (Widjanarko et al., 2021). On the other hand, the pandemic situation and R-YouC created new positive habits for the people, such as being more patient and obedient in dealing with these situations and more consciously actively protecting their safety, health, and hygiene of themselves, family, and other people also preservation and renewable energy (Y. Lu et al., 2020; Manesh & Rialp-Criado, 2019). This condition makes MSMEs more aware of environmentally business activities, especially for the community (Alraja et al., 2022). The past study archives examined particular green methods or a mix, yet a holistic representative is missing and limited to the literature idea (Fitriasari, 2020; Y. Liu et al., 2020).

MSMEs are being forced to improve their performance as a result of the current economic downturn. The role of the external business and internal business factors, also known as internal and external factors, are determinants of MSMEs' performance (Tumiwa et al.,

2020). This model is the response to the free trade challenges, whereas cannot explain the situation of the Covid-19 pandemic and R-YouC. In addition, MSMEs are businesses that have unique characteristics, that make one business different from others (Parnell et al., 2015; Pedersen & Sudzina, 2012). For this reason, internal and external environmental analysis is required to be grouped based on the type of MSMEs characteristics. Moreover, this conventional research on the MSMEs' performance has not examined the consequence of business processes on the environment and society.

Previous studies discussed that improving the MSMEs performance was inversely proportional to the environmental impact, especially for manufacturing industry (Nugroho et al., 2017; Omri, 2018). Some people think small enterprises do not harm the environment and neglect the responsibility to protect the environment (Battisti & Perry, 2011). Most of the pollution in either urban or rural areas is from industries, including MSMEs (Azhari et al., 2021; Chaniago, 2021; Corazza, 2018; Panero et al., 2018). Currently, entrepreneurial development is profit oriented and often disregards ethics in producing or distributing products. The evidence is COVID-19, which originated from the destruction of the wild animal's environmental habitats in Wuhan, which further mutated and transmitted to humans (K. E. Jones et al., 2008; O'Callaghan-Gordo & Antó, 2020; Rahman et al., 2020). Many studies suggest that MSMEs must become pioneers in environmental conservation and agents of change and saving the future through concrete actions because, although small, MSMEs significantly impact the environment (L. Li et al., 2020; Liakh & Spigarelli, 2020; Raharjo, 2019; Sari & Hasnelly, 2012; Weng et al., 2015). MSMEs need to carry out all their business activities not only profit-oriented and always ethical when treating the people involved as well as in environmental aspects (Choongo et al., 2019; Corazza, 2018). MSMEs are expected to be able to conduct environmentally friendly business processes. As a result, MSMEs require a concept known as the triple bottom line that can bridge the concept of performance with the concept of eco-innovation (Elkington, 1998), which is not profit-oriented but is also ecologically responsible, socially, morally, and ethically.

Recently, research on environmental issues has increased due to an emphasis on businesses as economic entities being more deliberate in their business activity outcomes (Díaz-García et al., 2015; Sáez-Martínez et al., 2014). Issues about the environment have attracted researchers from various fields of science (Schiederig et al., 2012). Publications on this issue have growth rapidly around 500 publications per year from 2007. Most of the researchers are home-based in Europe. However, most of the researches still limited in literature review about eco-innovation (Harsanto, 2020; Santini, 2017; Setyawati et al., 2018).

With the exponential increase in environmental issues research, there are also many debates about the unfavorable effects of applying the concept of environmental preservation to business performance, especially in the developing country (Ganda, 2018; Gilley et al., 2000; L. W. Lu & Taylor, 2018). In line with that, Ociepa-Kubicka & Pachura (2017) and Li et al. (2017) found that environmental preservation's impact will not immediately influence company performance and may take more than a year for companies to observe. Most of the previous research related to environmental preservation is limited to large enterprises (S. E. A. Dixon & Clifford, 2007; Santini, 2017). This debate arises because research on eco-innovation has not yet discussed entrepreneurship's main elements, such as spirit and entrepreneurial orientation (Guan et al., 2020).

According to John Elkington's triple bottom line concept (1998) environmental preservation and social impact are essential for MSMEs, but it is also critical to provide benefits to the business, which is profit. Entrepreneurship that carries a sustainability concept that uses internal factors and takes advantage of external factors is needed to generate profit. This concept is known as ecopreneur. Most of the debates on ecopreneurs are about the return of eco-innovation to business (Ociepa-Kubicka & Pachura, 2017; Przychodzen & Przychodzen, 2015). Fitria (2018) proposes three elements to encourage an entrepreneurial spirit that cares about the environment (ecopreneurship) as follows; Eco-innovation, Eco-commitment, and Eco-opportunity. Thus, ecopreneur and eco-innovation cannot be separated (Crecente et al., 2021). Many studies on ecopreneurs have been carried out both in small sample scopes and as in single case studies (Kearins & Collins, 2012; Kirkwood & Walton, 2014; Nguyen, 2018; Palmås & Lindberg, 2013; Pastakia, 1998) or still limited to literature studies (Santini, 2017; Setyawati et al., 2018).

However, slightly different from other studies on ecopreneurs, Palmås & Lindberg (2013) found empirical evidence that ecopreneurial concepts were unsuccessful in small farmers. They proposed a concept called agro-entrepreneurship that focuses on educating farmers about earnings, quality, customer, and marketing attention. However, their research is still in a qualitative and experimental approach and lacks statistical analysis. Most recent studies that used high-ranking impact factors indexing databases like Scopus and Web of Science ignored or did not focus on how ecopreneurs generate profit as part of their performance by doing eco-innovation in a small business (Alraja et al., 2022; Ben Amara & Chen, 2021; Corazza et al., 2022; Dash & Kumar, 2021; Musa et al., 2021; Rena et al., 2022). Psychological anxiety also encourages ecopreneurs to bridge the COVID-19 pandemic and

R-YouC issue and become an essential part of the sustainability model in the agricultural sector (Vlasov et al., 2021).

Subsequently, as described in the beginning, one of Indonesia's advantages lies in its enormous coastal area. Problems then arise when there is an inability and quality gap in the process of identifying, planning, managing, monitoring, optimizing, and maintaining the sustainability of the potential of the coastal area, creating a disparity between urban and rural areas (Tuegeh et al., 2021; Tumiwa et al., 2022). The coastal areas in this dissertation locate in rural areas. Tambunan (2008) observed that in rural areas, especially on the coastal coast, MSMEs are the most rapidly growing segment and play an essential function as a starting ground for growth. Paruntu & Tumiwa (2016) and Tumiwa & Paruntu (2017) add that, in suburban areas, MSMEs have a better-surviving rate than large enterprises. However, as one of the largest segments of the maritime economic sector, MSMEs in coastal areas often cause controversy regarding their environmental impact and human activity (social impact) (Diartho, 2017; Mensah, 1997; Varkey et.,al., 2021). The green agrobusiness idea is not enough in order to comprehend coastal areas considering Indonesia has the most extensive archipelagic nation in the world (Rochwulaningsih et al., 2019). Applying the ecopreneur and agrobusiness concept to preserving the environment and natural resources is one option to overcome these problems. Thus, the solution must be based on robust research.

Therefore, this dissertation essentially offers a business model based on eco principles that generate not only economic benefit but also ensure ecological sustainability and enhance the community welfare of coastal districts in rural areas and answer the current global trade disruption caused by COVID-19 and R-YouC. Thus, this dissertation introduces the eco-agropreneurship concept as a mediator to connect the internal and external factors that carry sustainable concepts (3Ps) in a coastal area that, if proven later, will increase the MSMEs performance. All the research gaps explained and how this dissertation contributes to addressing the research gap are summarized in table 1:

Table 1. Research Gap

Previous Findings	Research Gaps	Addressing the Gaps
Entrepreneurship	Profit oriented, no ecological and social concern	Eco-agropreneurship
Ecopreneurship on MSMEs performance	Limited on theoretical framework, no statistical evidence,	SEM model

Agrobusiness	No empirical, theoretical, and statistical evidence on coastal area.	Coastal area on Eco-agropreneurship
Impact of COVID-19 and R-YouC on MSMEs performance.	No empirical evidence	COVID-19 and R-YouC Awareness Variable and Eco-agropreneurship as mediating variable
Environmental preservation concept to business performance in the developing country	Positive and negative effects	COVID-19 and R-YouC awareness on Eco-agropreneurship: ecopreneur, agropreneur, coastal area (moderating)
Impact of internal factor such as production, marketing, technology, and financial on MSMEs	Ecological and social concern	Eco-agropreneurship as mediating variable
Impact of external factor such as competitors and supplier on MSMEs	Ecological and social concern	Eco-agropreneurship as mediating variable

Sources: Author archives data processing, 2022.

1.1. Introduction to Research Topic

The challenges of the strategic environment related to COVID-19 pandemic and R-YouC have created an enormous multiplier effect on developing countries, especially in rural areas, mainly to agrobusiness activities. Inequality between metropolitan and pastoral areas will also trigger the decline of rural MSMEs. For this reason, agricultural and rural development are required to continue to develop, especially with the industrial revolution 4.0. The advanced technology is expected to carry sustainability in developing agribusiness MSMEs in rural areas. It is time to develop an advanced agribusiness strategy that synergizes business activities eco-friendly and benefits the surrounding community that profit is not the main goal but the implications of implementing sustainability.

According to various ecopreneurship literature, there is still very little research on ecopreneurs in Indonesia. According to search results from high-ranking databases such as Scopus and WoS, only three studies discuss ecopreneurs related to eco-innovation with Indonesian as a research object (Fitria & Yuliana, 2018; Putri et al., 2019; Udiyana et al., 2018), and two studies mention Indonesia only briefly in their research discussion (Dash & Kumar, 2021; Ra et al., 2019). In contrast, the challenge of environmental degradation is enormous in Indonesia. According to the most recent OECD report (2019), Indonesia's economic growth is being accompanied by increased environmental pressure. In terms of entrepreneur numbers, Indonesia only has 0.24% entrepreneurs of the total population,

below Malaysia (4.74%), Singapore (8.76%), and Thailand (4.26%) (Ministry of State Owned Enterprises Republic of Indonesia, 2021).

Recently the focus of Indonesian economic development shifted from land-based to ocean-based, and as the world's largest archipelagic country, with the fourth longest coastline, research on ecopreneurship and agropreneurship in the coastal area is the original contribution that provides important insights into the MSMEs field's performance. However, there is still no leading research that examines the sustainability model for MSME, especially in agribusiness in the coastal area. Many previous studies still emphasize how MSME resolves existing classic problems. Even the majority of research on sustainability discusses large companies that will lead to sustainability disclosure or CSR reports only. Whereas besides MSMEs playing an essential role in the national economy, MSME is vital because it deals with several parties in the production process every day, especially in agricultural products. MSME maybe a little, but on a large scale can produce a tremendous impact on the environment. Whatever the impact is given, both positive and negative impacts, it will change the environmental sustainability. Thus, it would be better if the sustainability strategy can also provide benefits for entrepreneurs. For this reason, a business strategy model should carry the concept of sustainability as outlined in the Eco-agropreneurship model as a combination of ecopreneurship and agropreneurship. Thus, this research will give to the government and other related parties having explicit references on the factors that influence the MSME performance. Therefore, this research conducts titled as follows: Eco-agropreneurship in Eastern Indonesian Coastal Area.

1.2. Research Questions

This dissertation's main problem is the previous research gap in connection with current global problems and issues. In previous research, MSMEs' performance related to sustainability issues is still unclear with the determination of internal and external aspects. Furthermore, the issue of sustainability is linked to the advantages of coastal areas and current economic situation awareness. Thus, this dissertation introduces the research problem of the essential eco-agropreneurship influence on the MSMEs performance. The following is a research problem questions:

1. What is the definition and measurement of eco-agropreneurship?
2. Is there any significant influence of internal and external factors on eco-agropreneurship?
3. Is there any significant influence of the awareness of COVID-19, R-YouC, and coastal area knowledge on eco-agropreneurship?

4. How much would eco-agropreneurship effect MSMEs' performance?

1.3. Research Objectives

This dissertation drives the objectives based on the background examination and introduction to the research topic to analyze the factors concerning eco-agropreneurship on the MSME's performance. Based on the introduction to the research topic, the purpose of this study is to analyze the factors influencing the eco-agropreneurship model on the performance of MSMEs through a systematic literature review and structural equation modeling (SEM). Previous research has found that internal and external factors influence business performance. In an economic and political crisis, where environmental factors are at risk of being overlooked, a new approach to business performance is required. The eco-agropreneurship variable in this dissertation serves as a proxy for environmental and social performance. Another determining factor is the impact of coastal knowledge and awareness of the current economic situation on eco-agropreneurship. Furthermore, it is hoped that eco-agropreneurship will have a financial and non-financial impact on business performance. Therefore, the objectives of this dissertation are as follows:

1. Investigate the definition and assessment of Eco-agropreneurship.
2. To investigate the impact of internal and external factors on eco-agropreneurship.
3. To study the coastal area knowledge and current economic situation awareness connection on eco-agropreneurship.
4. Examine the impact of eco-agropreneurship on the performance of MSMEs.

1.4. Research Hypothesis Development

Several previous studies have shown several dimensions factors such as internal and external factors that impact MSME performance. Previous evaluations such as the education level, credit availability, human capital, marketing aspect, production aspect, government support assistance, customer, supplier, competitors and financial capital influencing the MSMEs Performance and related to the business growth (Tumiwa et al., 2020). MSMEs should have a clearly defined strategy to have a sustainable basis for creating and maintaining a competitive advantage in the market (Nabradi, 2010; Urbancová et al., 2020). The strategy can be divided into internal and external environments (F. R. David & David, 2017).

Based on the SLR analysis, it was found that during the crisis, internal and external factors were insufficient to improve business performance, especially if it is related to the issue of business performance by carrying out the concept of sustainability. Previous researchers

argued that other factors must mediate internal and external strategy models on business performance (Fernández-Olmos & Ramírez-Alesón, 2017; Gimenez et al., 2012; Pedersen & Sudzina, 2012). Previous research argues that the mediating variable is the concept of eco-innovation. However, the concept of eco-innovation, which includes environmental and social considerations, has a prolonged debate, with the most critical issue being that it cannot provide a return on profit for businesses, particularly small businesses in rural areas in developing countries (Ball & Kittler, 2019; Palmås & Lindberg, 2013). This insignificant effect should be tested with the quantitative approach. Therefore, this dissertation proposes a mediating variable of eco-agropreneurship to mediate between internal and external factors on business performance that measured by sustainability concept in agribusiness sector. Based on the SLR analysis, eco-agropreneurship is defined into several aggregate dimensions: internal and external factors, performance (financial and non-financial), ecopreneur and eco-innovation, recycling and re-use material, and agropreneur and eco-innovation.

The business performance measurement is based on sustainability concept that consist of economic, social, and environment (Affolderbach & Krueger, 2017; S. E. A. Dixon & Clifford, 2007). Social factor is essential on MSMEs since majority of this businesses type operate in rural areas where the social community is the competitive strength of local businesses that are not posed by other businesses in different area. Another factor that mediates internal and external factors is environmental preservation by ecopreneur and eco-innovation concept. The problem with the long debate of eco-innovation concept is profit return where entrepreneurship spirit and orientation are sometimes missing on the eco-innovation concept. Therefore, the entrepreneurial spirit must be shown with social and environmental consideration.

Furthermore, it is also necessary to prove whether, as a mediator, eco-agropreneurship can increase the determination on business performance. The measured performance is not limited to environmental or green performance, as previous studies failed to apply to increase income for small businesses in rural areas. However, these internal and external factors must be tested for their statistical value on MSMEs' performance. Thus, to fill the research gap, this dissertation formulates several hypothesis as follows:

- H₁ : Internal and external factor have positive effects on eco-agropreneurship.
- H_{1.1} : External factor has positive effects on internal factor.
- H_{1.2} : Internal factor has positive effects on eco-agropreneurship.
- H_{1.3} : External factor has positive effects on eco-agropreneurship.

H₂ : Eco-agropreneurship has positive effects on MSMEs performance.

In the COVID-19 and R-YouC, local resources are crucial for business performance, whose use must be based on an understanding of local knowledge (Adriani & Supriatna, 2019; Kissiya & Biczó, 2022; Nasser et al., 2021). The development of coastal areas regarding Indonesia's enormous fishery resources is no less important. MSMEs need to utilize these coastal resources as core competencies (Diartho, 2017; Paruntu & Tumiwa, 2016; Widjanarko et al., 2021). Thus, the concept of eco-innovation must be combined with agropreneur, defined as eco-agropreneurship. The important thing is the local knowledge or traditional knowledge is one of the essential entrepreneurs' skills in rural areas. No previous research has discussed how local wisdom or traditional knowledge affects the adoption of ecopreneurs. The failure to implement eco-innovation in rural areas may be due to the lack of synergy between the spirit of environmentally friendly entrepreneurship and local wisdom. This variable needs to be measured separately to understand how far local wisdom can affect eco-agropreneurship. In addition, this variable is separated from eco-agropreneurship because the measurement through this variable must adjust and consist of the local wisdom situation in the research area.

Furthermore, this dissertation proposes the concept of local knowledge or wisdom to answer the debate that MSMEs in rural areas is difficult to implement the concept of eco-innovation. Local wisdom manifested in local geography knowledge, unique expertise in managing natural resources (ex., fishermen, mountain climbing experts, etc.), knowledge of the needs of local communities, etc., are part of the internal business factors owned by employees, managers, or mostly owners of MSMEs. Based on the previous research, local wisdom is included in social factors that belong to the external factor, yet, it is also a strength that is included internal factors. Based on preliminary research, this dissertation considers local knowledge as a separate factor that could be a solution to the research gap regarding the MSMEs issue in environmental preservation and business performance. Therefore, the following are several hypothesis formulations:

Business performance needs to be measured based on the three important elements of sustainability (3Ps). Based on the SLR analysis, this sustainability element is induced in the internal and external factors, eco-agropreneurship, and MSMEs performance. In carrying out the sustainability issue, some argue that the global crisis due to covid and R-YouC can put the issue of sustainability at risk. Some literature analysis shows that sustainability concept on SME performance through complicated advance model might not suitable on MSMEs (Torugsa et al., 2012). Other research about social responsibility and found that it

influences on non-financial outcomes such as image and reputation (López-Pérez et al., 2017a; 2017b). On the other hand, some experts consider that during COVID-19, entrepreneurs are encouraged to do social services as a form of helping others. In addition, the impact of the economic turmoil caused by COVID-19 and the R-YouC has made entrepreneurs more aware of maintaining health, complying with safety protocols, and trying to be more creative and innovative in finding information regarding market needs or cheap credit opportunities, especially in during a pandemic (Amankwah & Sesen, 2021; Bacq & Lumpkin, 2021; Belitski et al., 2022; Liñán & Jaén, 2022; Ruiz-Rosa et al., 2020; W. Wang et al., 2021). For this reason, this dissertation will also use previous research to measure the impact of the economic awareness by COVID-19 and the R-YouC. Therefore, the internal and external factors model through the concept of eco-agropreneurship with global crisis awareness, if proven later, can affect the MSMEs performance. Therefore, the following are the hypotheses built:

H₃ : Coastal area and economic awareness have positive effects on eco-agropreneurship.

H_{3.1} : Coastal area has positive effects on eco-agropreneurship.

H_{3.2} : Economics awareness has positive effects on eco-agropreneurship.

This dissertation also analyze the direct influence of coastal area variables and economic awareness on business performance to determine how much the eco-agropreneurship variable can mediate between these variables. The hypotheses are as follows:

H₄ : Coastal area economic awareness have positive effects on MSMEs performance.

H_{4.1} : Coastal area has positive effects on business performance.

H_{4.2} : Economic awareness has positive effects on business performance.

Since the direct effect is essential, this dissertation tests the direct effect of internal and external factors on business performance. If it proved that the direct effect has a significant effect, it means that eco-agropreneurship as a mediating role is unimportant. Thus, this dissertation formulated an additional hypothesis as follows:

H₅ : Internal and external factors have direct significant effect on business performance

H_{5.1} : Internal factor has positive effects on business performance.

H_{5.2} : External factor has positive effects on business performance.

The research framework and hypothesis are shown in the figure 1:

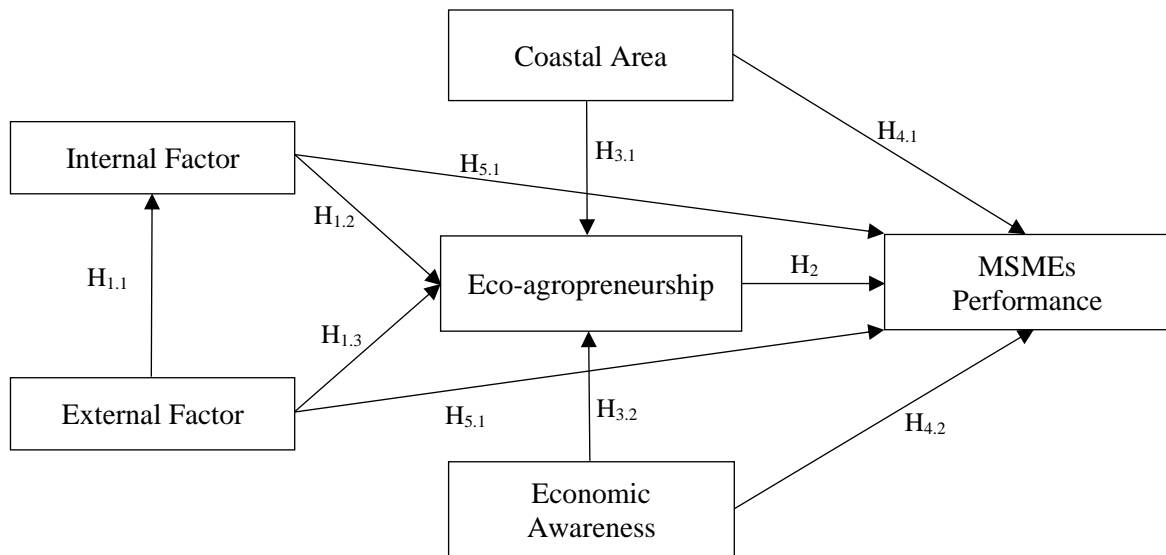


Figure 1. Research Framework and Hypothesis

Source: Author archives data processing, 2022.

1.5. Research Approach and Structure of the Dissertation

Following conducting a critical review of all documents and categorizing the articles by first-order classification/categories, second-layer composition/themes, and aggregate dimension, a concept was discovered as a bridge to the previous research gap in analyzing the effect of the eco-agropreneurship model on the performance of MSMEs. This dissertation is divided into six primary chapters and several sub-chapters as strategic steps to address actual issues regarding MSMEs in coastal areas and eco-agropreneurship research models. It explains the implications based on descriptive analysis and structural equation modeling methods. Furthermore, the six chapters are explained as follows:

The first chapter is an introduction for research topic as the background to explain how the global crisis of COVID-19 and R-YouC affect all sectors, especially on economic growth. This dissertation highlights the importance and sheds light on the research of eco-agropreneurship in coastal areas, considering that recently businesses have prioritized profit over environmental and social preservation because of the global crisis. Various previous studies have tried to present this fundamental problem and answer this phenomenon, yet still have various limitations and leave a research gap. Most of the previous research has limitations to the conceptual model and does not include the recent global economic crisis, which according to other previous research, is significant to ecopreneurship. This dissertation fills the gap and, with a statistical approach, technically makes the research problems about ecopreneur and eco-innovation models in rural areas clearer to examine. Subsequently, this chapter explains how descriptive analysis and structural equation

modeling are robust methods for answering research problems. This chapter also explains the structure of the dissertation, methods for solving research problems, and the research procedures to answer objectives. This introduction section is essential because it drives the following chapters.

Chapter two starts with a grand theory from previous research. The first grand theory is entrepreneurship, focusing on entrepreneurship to explain the eco-agropreneurship variable. This dissertation discusses the theory of entrepreneurship from the Neoclassical, Kirzner, and then to the modern term from the behavior approach. This approach explains entrepreneurship from the perspectives of innovation and social impact. From this approach, entrepreneurship theory is linked to another grand theory of organizational behavior supported by strategic management theory to explain the MSMEs performance, including contextual aspects from internal and external pressure and MSMEs performance related to eco-innovation theory. Subsequently, from the grand theories, this dissertation constructs the middle theory dan applied theory to explain the current phenomenon or background of the problem in the introduction. The first one is coastal community in rural areas, as a latent variable of eco-agropreneurship. The other is awareness of COVID-19 and R-YouC, and their manifest variables. Furthermore, this second chapter will also explain the relationship between variables to form a conceptual framework and analysis tools that will be used based on previous research.

The next chapter is the methodology section (chapter 3) which explains the approach method used in the dissertation, referring to the research gap in previous studies. This chapter discusses selecting rural areas as the research population and stratified random sampling methods to generalize the population. Chapter 3 also explains the operational definition of variables used in the analysis and the manifest variable. Furthermore, a structural questionnaire was arranged with data collection methods to obtain valid and reliable results related to outer model analysis. Chapter three also explains the research stages, including measurable achievement indicators or milestones at each stage. Chapter 3 (three) is essential to explain the significance of descriptive analysis tools and PLS-SEM models. The PLS-SEM analysis will contain three main parts: an outer model analysis, an inner model, and research hypotheses.

The next chapter is chapter 4, which is about data analysis and discussion results. Chapter 4 starts literature review from previous research. The essential of chapter two is the definition and measurement of Eco-Agropreneurship. Since this term does not exist in all scientific databases, this dissertation defines the variable using a systematic literature review

(SLR) with Title Abstract Alignment (TAA) from reputable databases. This chapter further explains all the keyword combinations, syntax, and coding processes. Furthermore, this chapter explains all the definitions of variables used and how to measure them to clarify the gaps in previous research. Subsequently, this chapter will also explain the driver and performance dimension of eco-agropreneurship model.

The SLR result is followed by factoring analysis to reduce indicators of eco-agropreneurship. Next, statistical analysis is descriptive statistics to determine the respondents' characteristics. After that, the data will be used in model analysis using PLS-SEM. This model's analysis starts from the outer model analysis by discriminant validity analysis. Finally, this dissertation analyzes reliability using composite reliability and AVE in the outer model analysis. Estimating the manifest variable relationship and determining the absolute contribution to the latent variable is essential. After the structural model is formed, the inner model is the following analysis. The analysis of the inner model started with the assumption and then divided into the analysis of direct, indirect, and total effects; effect size F^2 ; the coefficient of determination R^2 ; Predictive Relevance Q^2 ; effect size of Q^2 (q^2) and GoF by using global fit PLS-SEM to compare the outer model and the inner model. The final stage in this modeling test is the hypothesis, then the discussion part of interpreting the results of data analysis and comparing with previous research.

The next chapter is chapter 5. This chapter describes the research results as an answer to the research problems raised in the previous chapter. This dissertation sheds light on various debates about the unfavorable of implementing ecopreneurship and eco-innovation associated with the latest issues, such as COVID-19 and R-YouC. Furthermore, this dissertation contributes to developing theory in entrepreneurship, organizational behavior, and rural development. More specifically related to eco-agropreneurship, MSME performance, and coastal areas. Furthermore, this chapter describes the impact of managerial, government, and various stakeholders as research-based decision-making.

The last chapter is a research summary of all the important facts from chapter 1 to chapter 5. This chapter indirectly explains the consistency of research results based on the research problems, objectives, hypotheses formulation based on research objectives, and finally, conclusions to answer the research objectives. Furthermore, other important information is in the references list, tables list, a list of pictures/figure, and examples of research questionnaires.

The roadmap and research approach in this dissertation is shown in Figure 2:



Previous research works:

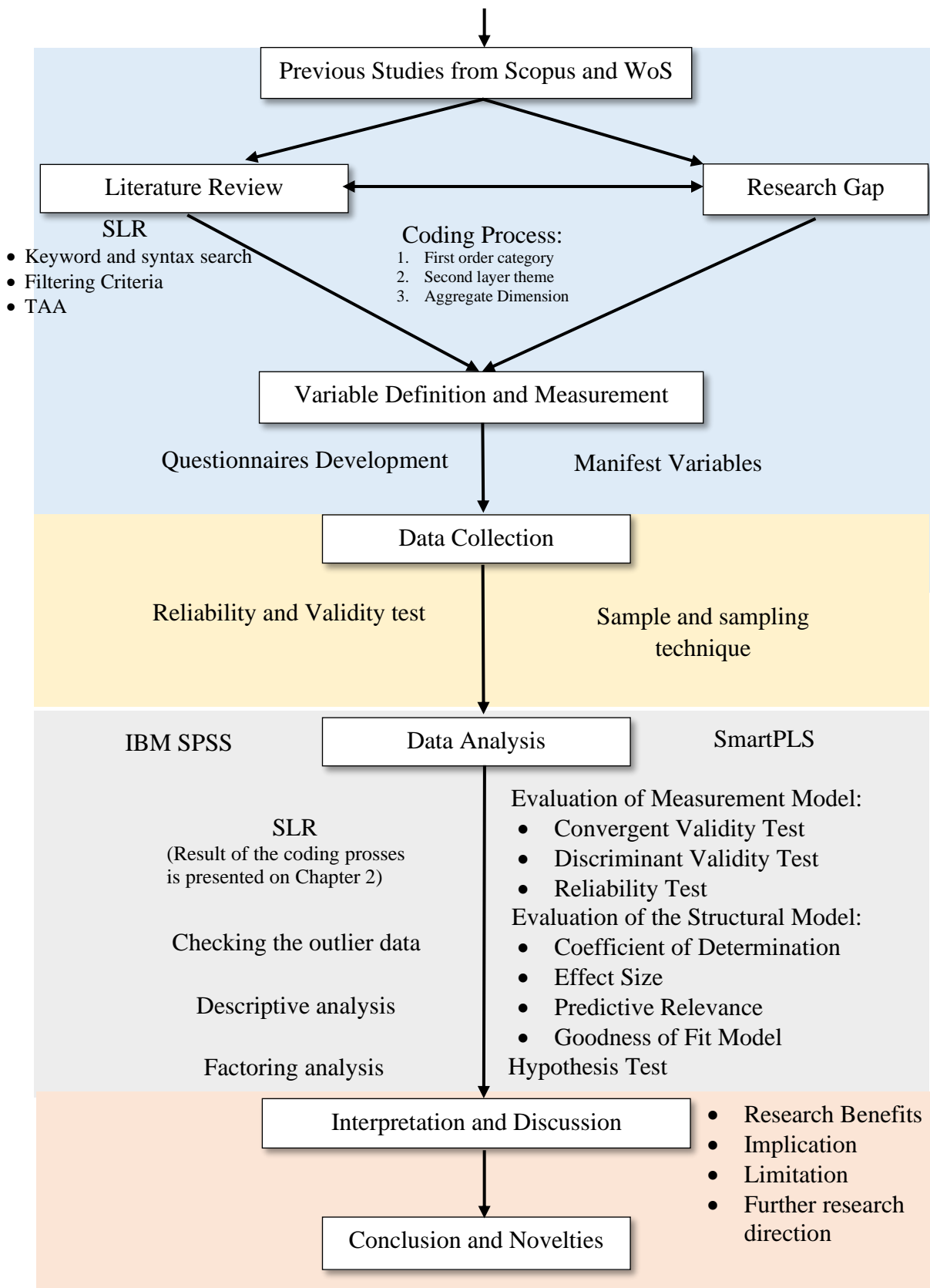


Figure 2. Research Approach

2. LITERATURE REVIEW

In this dissertation, the systematic literature review (SLR) method is used to confer previous theories to support the findings. The literature review search begins by looking for articles in reputable databases with high rankings, such as Scopus and WoS. Approaches and method related to all the keyword combinations searched, syntax, and coding processes related to SLR are discussed in chapters 3 and 4. This chapter contains the grand theory of Entrepreneurship, Organizational, and several middle and applied theories related to eco-agropreneurship.

2.1. Entrepreneurship

According to Klein (1988), entrepreneurship is a factor of production. This concept is stems from the phrase by Samuelson (Samuelson, 1948) as an evil of monopoly. MSMEs as a household can convert inputs into outputs in diverse modes, using diverse assortments of inputs. The production function assert the relationship between input and production. A production function exhibits the most increased production yield that the company can achieve for each combination of inputs (Pindyck & Rubinfeld, 2018). In the economic approach, production is affected by the input aspect. Factors of production are inputs (resources required to create the products) (Colander, 2005) or everything that businesses use as a production procedure element (Mankiw, 2017; Pindyck & Rubinfeld, 2018). These production factors are primary resources available to the community or company.

Factors of production can be classified in various ways. Miller (1983) mention entrepreneurship is one of the factor of production. However, Case and Fair (2007) excluded entrepreneurship factors because this factor was unmeasurable. Case admits that entrepreneurship was usually included as a separate factor of production in textbooks in the early days of economic development. According to Case et al. (2016), most economists believe that the surplus in entrepreneurship exists if the opportunity to make a profit is available, and entrepreneurs will appear to benefit from the opportunity.

Pindyck and Rubinfeld (2018) mention production factors only three: labor, raw materials, and capital. They enclose entrepreneurship as a workforce element. In their explanation, labor inputs related to entrepreneurs such as skilled workers as engineers and carpenters or amateurish hirelings and entrepreneurial exertions from company managers. Case et al. (2016) state that innovative entrepreneurs are critical human resources in an economy. The developing country needs to develop a new production technique adapted from advanced technological countries.

The following is a simple production function equation:

$$Q = f(C, L) \dots \dots \dots \text{(Kindangen et al., 2019)}$$

Where:

- L : labor;
- Q : output;
- C : capital.

If the additional of production factors such as human capital, physical capital, land, labor, and entrepreneurship, are included in the production model, the production function as follow:

$$Q = f(L_1, L_2, C, H, E) \dots \dots \dots \text{(Kindangen \& Tumiwa, 2017, 2015; Kindangen et al., 2019)}.$$

Where:

- Q : the result of production,
- L₁ : land,
- L₂ : labor,
- C : physical capital,
- H : human capital,
- E : entrepreneurship

The Q is the result of production in the form of physical goods or commodities in kilograms or tons or other physical measurements, can be converted into monetary or financial value if multiplied by the price per unit. Because the relationship between inputs and production outputs is positive, it means that the more or larger the volume of the factors of production, the greater the production output, both in terms of physical volume and financial value or monetary value. In terms of money, production results are referred to as income. Thus, production or income will be higher if the input's physical volume is higher. As a factor of production, entrepreneurship positively affects production results or income. The more the entrepreneurship level, the more significant the business performance.

Entrepreneurship is part of the factors of production. The concept of entrepreneurship originated from Samuelson's (1948) expression as a monopoly crime. These theories are often seen as Neo-Classical, which views the company as a technical term, where management (individuals) only knows the costs and revenues of the company and only performs mathematical calculations to determine the optimal value of the decision variables. In this theory, independence is invisible because this was in the past when the problem of independence was not urgent, but it was enough to be the initial theory to subsequent theories (Leigh, 1974; Nelson & Winter, 1974).

The concept of entrepreneurship was discussed earlier in a book by Frank Knight in 1921 on Risk, Uncertainty, and Profit. Knight (1921) succeeded in combining responsibility and control. Slightly different from Knight, Schumpeter (1942) views entrepreneurs from innovation perspectives. However, Knight's theory is supported by Friedrich Hayek (1937), and Israel M. Kirzner (1973), hereinafter referred to as Kirzner's theory which focuses on human performance, tenacity, seriousness, sincerity, to be independent in doing business, that the progress of a business depends on the effort and tenacity of the entrepreneur. Kirzner's theory still has many critics, including the concept of capitalism (Lekachman et al., 1973; Schumpeter & Clemence, 2017). However, with Kirzner's theory, many theories of entrepreneurship from various scientific perspectives were born (Guerrero, 2021).

Several other views on entrepreneurship are as follows:

- The sociological theory, which studies the origins of culture and social values in a society, will impact its ability to respond to business opportunities and cultivate businesses. For example, the coastal community.
- The psychological theory emphasizes the individual motives behind him/herself entrepreneurship. This theory is related to behavior theory.
- The last is the behavioral theory, entrepreneur skills of handling the finances and managing a business, making the networks, and commerce the products.

Literally, the term entrepreneurship came from France and was first introduced by Richard Cantillon (1755) in his essay "*Essai sur la Nature du Commerce en Général*" in Thornton (2007) means that entrepreneurs are individual or entity who purchases input of production at specific prices to converge them. Furthermore, Harvey Leibenstein (1968) suggests that entrepreneurship includes the activities of creating opportunities and managing a company when whole demands have not been created or not yet clearly identified, or the production function components are not fully known. According to Miller (1983), entrepreneurship is a component of human resources that carries out the procedure of organizing, managing, raising capital, assembling other factors of production, deciding the fundamental business direction, and bearing the risks. An entrepreneur is someone who administers, manages, and carries the business risk, captures or takes new concepts of a new product, and converts it become a prosperous gain (Case et al., 2016). Entrepreneurship is the risk taker readiness in creating and operating an enterprise that discovers a potentially profitable opportunity and then makes a strategy to gain success and create earnings (C. Jones & English, 2004). Ebert and Griffin (2020) see entrepreneurship as a process of looking for business opportunities or opportunities under risk conditions or constraints; An entrepreneur is a

businessperson who bears the risks and takes the opportunities to create and operate an enterprise scheme (Kindangen & Tumiwa, 2017, 2015).

Following Kuratko and Hodgetts (1998), entrepreneurship is a process of innovation and devising new businesses supported by collaborative networks with government and other related institutions/bodies via four main dimensions: individual, organizational, environmental, and process. Kuratko and Hodgetts (1998) cite Peter Drucker views innovation as a specific entrepreneurship role that creates and generates resources with advanced prospects to create wealth. Thus, entrepreneurship cannot be separated from innovation.

Entrepreneurship is seen not only to seek personal gain but also must have social value (Cherrier et al., 2012). Cohen and Winn (2007) explain that entrepreneurship is one's ability to be sensitive to opportunities and take advantage of these opportunities to make changes to existing systems. In the term of entrepreneurship, the meaning of an opportunity is an opportunity to realize or carry out business while taking into account the risks that can be managed (Besser & Miller, 2013). Related to risk, entrepreneurship is a procedure for an individual or group to use organized efforts and means to look for chances and make a growth value to satisfy their needs and desires via originality and innovation (Gartner, 1990; Parnell et al., 2015).

The choice to become an entrepreneur should be considered positive and negative. Entrepreneurs experience unpleasant personal pressures, such as the need to invest more time, energy, thought, the possibility of failure in business, and the absence of guarantees to succeed (Dottore & Kassicieh, 2017). No one wants failure, but an entrepreneur must be prepared to accept various risks associated with business failure. Entrepreneurship requires high commitment and sacrifice because it will get challenges in the form of hard work, emotional pressure, and risk, even uncertainty (Brundin & Gustafsson, 2013). Thus, innovation plays an essential role in this matter. MSMEs must adapt to various aspects of the business environment by relying on entrepreneurial capital (Brown et al., 2005). Likewise, other aspects/fields of science relating to entrepreneurship must prioritize understanding entrepreneurship in its role in carrying the idea of sustainability.

Table 1 below is the summary to all entrepreneurship used in this dissertation:

Table 2. Entrepreneurship Theory

Author	Theory Use in this Dissertation
(Kindangen & Tumiwa, 2017; Kindangen et al., 2019; Klein, 1988;	Entrepreneurship as factor of production.

Miller, 1983; Pindyck & Rubinfeld, 2018; Samuelson, 1948)	
(Brown et al., 2005; Brundin & Gustafsson, 2013; Dottore & Kassicieh, 2017; Knight, 1921; Kuratko & Hodgetts, 1998; Schumpeter, 1942)	Entrepreneurship from innovation, responsibility, and control (Risk, Uncertainty, and Profit)
(Hayek, 1937; Kirzner, 1973; Lekachman et al., 1973; Schumpeter & Clemence, 2017)	Kirzner's theory and the critics.
(Besser & Miller, 2013; Cherrier et al., 2012; Cohen & Winn, 2007; Ebert & Griffin, 2020; Gartner, 1990; Guerrero, 2021; Leibenstein, 1968; Miller, 1983; Parnell et al., 2015; Thornton, 2007)	Kirzner's theory leads to entrepreneurship from various scientific perspectives: <ul style="list-style-type: none"> • Sociological theory • Psychological theory • Behavioral theory

Sources: Author theoretical data processing, 2023.

Entrepreneurship need to deal with sustainability issue. This sustainability concept by John Elkington in (1998), states businesses must pay attention to the 3Ps. It is also important if it is connected to the object of research regarding the development of coastal areas, it cannot be separated between the concepts of eco-friendly, innovation, and coastal agriculture. It is further called Eco-agropreneurship.

Eco-agropreneurship

Like other management terms, Eco-agropreneur is uncomplicated to conceptualize but hard to clarify. This dissertation defines the Eco-Agropreneur from the word eco, which means carrying the concept of sustainability from an environmentally friendly perspective. This new concept is a business strategy in rural agriculture, where this concept carries the understanding that profit is not the prior goal of a business yet the result of the implementation of Eco-Agropreneurship.

The term of Eco-Agropreneurship does not exist in all scientific databases. The research begins from the several keywords combination searched of the articles published in the leading impact factor databases which are Scopus and Web of Science. This study uses two main keywords combination, which is ecopreneurship and agropreneurship. All the articles should be in English. Furthermore, all documents should include the keyword of "eco-innovation" or "green entrepreneur" in the title and abstract, and they should be published in peer-reviewed journal articles to ensure rigor and acquire quality archives (Tumiwa et al., 2022).

The eco-agropreneurship definition stems from the theory related to ecopreneurs developed by Schaper (2002) suggests the components of ecopreneurship are sustainability, greening, and entrepreneurship. In the same years, Schaltegger (2002) stated that Ecopreneur combines the terms "ecological" and "entrepreneur". Eco is from the phrase Oikos which means home or place of life. Schaper (2002) cites the opinion of Bennett (1991) and Berle (1993), who put forward The ecopreneur concept has a beginning to divine the meaning of green entrepreneur, environmental entrepreneur, eco-entrepreneur, and the derivation of the ecopreneur. It can be interpreted that ecopreneurship comes from a combination of the terms environment and entrepreneurship (S. E. A. Dixon & Clifford, 2007). Basically, ecopreneurship is an environmentally sound entrepreneur in running his business. Traditionally, environmentally sound business management focuses on efforts to make existing companies greener (green business) (Isaak, 2002; Kirkwood et al., 2017). Schaper (2002) discusses how a policy can encourage entrepreneurs to pay attention to their companies to be greener. Furthermore, Schaltegger (2002) explained that an ecopreneur is an entrepreneur who can balance business growth and environmental development, but how to prove it, what factors influence it, and how to apply it, have not been discussed further in his research. The following year, Randjelovic et al. (2003) described the emerging phenomenon of environment-related green venture companies and provided an overview of the current market for this type of investment. In 2005, Beveridge and Guy (2005) supported the opinion by explaining the ecopreneurs to the internal and the external factor.

Ecopreneur represents the process of applying entrepreneurial principles to create a business that can overcome environmental problems or operate sustainably. According to Kirkwood and Walton (Kirkwood & Walton, 2010b, 2010a, 2014), ecopreneurs are entrepreneurs that operate businesses that carry the code of sustainability. This definition means that in their business practice, they are not only thinking about temporary financial gains but are also involved in environmental conservation. An ecopreneur must be sensitive and concerned with the latest problems in the environmental field, then must integrate them into his business and make a profit.

In the era of globalization, a global crisis of pandemic, and R-YouC, entrepreneurship needs to deal with various entity activities that do not recognize national borders (J. W. Lu & Beamish, 2006). The activity with no boundaries makes the business faces competition from many directions (Kirkwood & Walton, 2010b; Lanfranchi, 2010; Sarkar, 2013; Thiers, 2002). With this increasingly fierce competition, entrepreneurs must have creative ideas and innovation to compete with other entrepreneurs from various countries to keep their

businesses sustainable in the future (Sarkar, 2013). Business sustainability is an economic opportunity where increasing business performance and sustainability has been tinged with social and environmental issues (Cohen & Winn, 2007; Veleva & Bodkin, 2018). Bowers (2010) said that by framing sustainability in business activities, an economic value impacts the public's understanding of how well the business activities are concerned with social and environmental issues. Furthermore, entrepreneurs can provide activities and contribute directly to overcoming these social and environmental problems by integrating value-oriented movements (value-oriented driven) to achieve sustainable business growth (Ben Amara et al., 2020; S. E. A. Dixon & Clifford, 2007; Ganda, 2018; Nugroho et al., 2017). Entrepreneurs are recognized as the creators of economic growth. Thus, implementing ideas about sustainable development must go hand in hand with efforts to achieve economic growth and, in this way, guarantee the adequate protection of the global environment. As a result, when conducting business, they consistently pay attention to the carrying capacity of the environment and strive to minimize the negative impact of production on the environment while improving financial performance (Randjelovic et al., 2003; Rodgers, 2010; Sonne, 2012; Tantayanubutr & Panjakajornsak, 2017; Veleva & Bodkin, 2018)

Among the 96 articles that match the filtering criteria in this dissertation, there are still limitations in responding to the impact of implementing sustainability for generating profit. Recently, Rena et al. (2022) discussed the link between sustainability and eco-innovation by utilizing waste management in a literature study. They gave a glimpse of eco-innovation developments from various countries. Adding to the internationalization of the sustainability movement, Corazza et al. (2022) discussed addressing the accountable manners of MSMEs in local firms. Mainly they discuss the impact of geographic macro-areas that impact SMEs sustainability implementation. In addition, Alraja et al. (2022) researched organizational management sustainability performance with the Technology – Organization – Environment (TOE) approach. However, the profit element is still missing from the sustainability performance measurement (Karimi & Nabavi Chashmi, 2019). Dash and Kumar (2021) add a conceptual method that puts forward the importance of balancing business, social, and ecological, where the business factor is the main one and cannot be separated from the sustainability component.

Most of the ecopreneur literature clearly responds to the environmental crisis. It is much less explicit about social sustainability. Musa et al. (2021) researched students' intention to become agribusiness entrepreneurs but still missed the eco-innovation factor. Ben Amara and Chen (2021) researched the driving factors for eco-innovation related to agribusiness.

Using eco-innovation strategies as mediating effect, they used SEM to explore the eco-innovation drivers and firms' sustainable business growth. They found three variables proposed as drivers of the eco-strategy: the regulation side, demand side and supply side. Palmås & Lindberg (2013) found that livelihood initiatives proved successful in demonstrating the economic benefits of agro-economic practice among rural farmers. They explore ecopreneurs' problems, especially when ecopreneurial fail to generate economic benefits for the small business farmer. In practice, they propose the term "agro-entrepreneurship" focuses on educating farmers about the quality concern, customers, marketing, and how to gain surplus.

This dissertation uses the theory of agriculture and entrepreneurship, which is also an essential element in eco-agropreneurship. The use of the term agribusiness in Indonesia has been developing among academics since the 1980s. At the same time, the approach to agricultural development in Indonesia began in 1994 (A. Purnomo et al., 2020). Agrobusiness includes all business management activities, including business that produces production facilities for farming, agricultural production processes, and business that handles processing, transportation, distribution, wholesale sales, and retail sales of products to end consumers (Mariyono et al., 2020). The diversity of agrobusiness is widely varied, even leading to other sectors like tourism. Agrobusiness in coastal areas scope starts from the primary producers to the end consumers and involves almost every type of business, including fishery, culinary, and tourism (Saroyo & Mulyati, 2015).

The challenge is the business scope, other differences can be seen in the size of agribusiness actors and fierce market competition, especially in small-scale agribusiness where there are many sellers while buyers are few due to the current restriction and shortage. Another challenge is the way of life adopted by agrobusiness actors, who tend to make agribusiness more traditional than other businesses (Santini, 2017; Tumiwa et al., 2022). The fact shows that agribusiness tends to be oriented and run by farmers and families and is highly seasonal (W. David & Ardiansyah, 2017; Komatsuzaki & Syaib, 2010; Michon & Mary, 1994).

Based on the explanation of the literature study, this dissertation concludes with eco-agropreneurship. First, eco-agropreneurship is a concept that combines ecopreneurship and agropreneurship concepts. This is important because the research location is in accordance with the agribusiness sector, and eco-innovation is considered an answer to environmental sustainability issues and social problems caused by the global economic downturn issue. Furthermore, eco-agropreneurship will be translated into five aggregate dimensions, which

will be explained further in the results and discussion section. Through this concept, it is expected that the main business objective is not profit-oriented but environmental preservation and social responsibility. Thus, profits are the implications of implementing eco-agropreneurship.

All the eco-agropreneurship theory that used in this dissertation is summarized in the table 11 about data structure and coding process in the SLR result section.

2.2. Organizational Theory

As a business entity, MSMEs have the same goal as large companies to optimize their profits. Therefore, MSME performance criteria are generally approached from organizational performance theory (Robbins & Judge, 2018). The concept is the work result done by employees or work performance that employees have achieved in doing work (Podsakoff & MacKenzie, 1997). Then the performance theory is developed in order that can be defined as the outcome of the work quality and quantity that workers have acquired in doing their commitments based on their responsibilities.

Dessler (2015) states that performance results from work achieved by a person or organization in completing tasks assigned based on experienced skill and seriousness measured by time. Moullin (2007) argues that performance is the result or overall person's success level with a specific time in bearing out the task determined in advance agreed by the group. Further explained that performance is an achievement of work taken by a person or organization, by their respective obligations and responsibilities to fulfill the business vision and goals and not to forget the applicable legal rules under morals and ethics (M. Simpson et al., 2012). Successful entrepreneurs generally have the competence shown by their attitudes and behavior in running a business. An excellent attitude and behavior can help someone achieve and surpass the expected performance (Sakari Soinen et.,al., 2013). Richard.,et al.,(2009) and Collins (2001), stated that performance of organizational can be influenced by several factors as follow:

- 1) Individual factors. This factor includes the knowledge or insight of the individual, the skills and abilities of the individual, being motivated, committed, and having a sufficient level of confidence.
- 2) Leadership factor includes the ability to encourage to become optimistic in the team. In addition, it can provide direction and support for fellow employees in carrying out the work assigned.

- 3) Group factor (team), which includes how much the group members contribute to the work, then how much enthusiasm from the group to achieve organizational goals, cohesiveness, trust, and closeness among fellow group members.
- 4) System, which includes how a system can support the course of an activity. It can be seen from the available facilities provided by the organization.
- 5) Contextual factors include aspects of pressure caused by outside or within the organization.

Furthermore, the definition of business performance will be seen in the MSME performance described in the next section.

2.2.1. MSME Performance

2.2.1.1. Definition

The research theory guideline on MSME performance is organizational theory. However, there are several perspectives related to organizational theory and enhanced business performance definition and measurement, such as financial, infrastructure, human resources, organization, operations, and business strategy perspectives. Traditionally, business performance is only seen in the financial aspect, where financial ratios such as the level of liquidity and profitability measurement (F. Chen et al., 2018; Horrigan, 1968; Saleh et al., 2011). Unlike the financial aspect, a marketing perspective focuses more on sales and market share, slightly revoking the financial aspects (Haluk Köksal & Özgül, 2007; Siu, 2000).

Business performance has experienced many continuous developments, from conventional concepts to concepts considered more advanced, with a better indicator measurement. Prior investigation researches claims that the operation of SMEs is determined from an advanced financial perspective (Gibson et al., 2014; Tumiwa & Tuegeh, 2019). They measured business performance from the perspective of the profit center. The profit center shows the amount of income and how it is managed. This concept is where an entrepreneur's proper financial managerial role controls the revenue center to invest outside and inside the company. According to Swanson et al., (1978) stated that:

“Money spent now to train someone will keep coming back in future year in the form of greater efficiency and, therefore could well be viewed as an investment.”

Another investment in the business could be training and improving production equipment to increase business productivity (Koh et al., 2009; Swanson et al., 1978). Related to investment and its prospects in the future, business performance is the influence of various factors to accomplish organizational purposes by the work procedure or actions of a person

or group within a specific time inside an organization (Miller, 1983). Based on organizational theory, performance is essential for businesses, especially the performance of entrepreneurs who will bring the business to achieve the expected goals because the good or bad performance of entrepreneurs can affect the good or bad business performance (Guiliani et al., 2021). Based on the previous research, efficiency is the key to the performance reflected in the product (Bae & Chang, 2012). Usually, better performance is related to better quality, emphasizing the efficiency of the human resources used (Clark, 1992). Thus, it is essential to convert the knowledge, expertise, motivation, enthusiasm, attitude, and expectations of entrepreneurs into the results expected (Hendriani et al., 2019; Soininen et al., 2013).

Thus, this dissertation defines business performance as a construct commonly used to measure the impact of a company's strategic orientation, including internal and external factors. Thus, the decline in performance is the implication of failure to deal with the challenge of the company's strategic orientation to continue to maintain good company performance through a strategic orientation to sustainability. Business performance results from many continuous decisions by management to achieve specific goals effectively and efficiently. A business is an organization formed to achieve certain goals, among others, to earn profits and ensure business continuity. Performance might be measured through objective and subjective performance through perception.

2.2.1.2. Measurement

A comprehensive precise MSME performance measurement has not existed. Earlier studies concentrate on easily obtained information variables (Hendriani et al., 2019). The Balance scorecard (BSC) is a frequently used method to measure business performance. The BSC performance assessment methodology incorporates financial and non-financial perspectives (Kaplan & Norton, 2007). However, the BSC strategy is not appropriate for MSMEs because they are not the same as large-scale firms.

To anticipate the business performance data unavailability, prior studies used manager/owner responses (Covin & Slevin, 1989). According to Tumiwa et al. (2020), prior researches has proven that subjective measurement has high reliability and validity in measuring performance where the sample is SMEs with different objectives and criteria. They also stated the advantages to choose subjective measurement.

As a result, this research employs subjective measures to assess the performance of MSMEs. The indicator is based on BSC indicators that have been tailored to MSMEs. Owner

perception is used to gauge business performance. This viewpoint should be based on a willingness to preserve the environment and social responsibility—the measurement is both financial and non-financial. Financial performance is measured by respondent opinion on profitability and sales revenue (Hoogendoorn et al., 2019; Kirkwood & Walton, 2010b; Manesh & Rialp-Criado, 2019; Tantayanubutr & Panjakajornsak, 2017). Non-financial performance is measured by several indicator such as marketing performance, image, competitive advantage, etc. (Alraja et al., 2022; Ben Amara & Chen, 2021; Corazza et al., 2022; El Harbi et al., 2011; Fitria & Yuliana, 2018; Peralta et al., 2019; Tantayanubutr & Panjakajornsak, 2017; Zhao et al., 2020).

Table 3. MSMEs Performance

Author	Theory Use in this Dissertation
(Collins, 2001; Dessler, 2015; Guiliani et al., 2021; Hoogendoorn et al., 2019; Moullin, 2007; Podsakoff & MacKenzie, 1997; Richard et al., 2009; Robbins & Judge, 2018; M. Simpson et al., 2012; Soininen et al., 2013)	Organizational theory, entrepreneur, and leadership
(Covin & Slevin, 1989; Kaplan & Norton, 2007)	BCG
(F. Chen et al., 2018; Gibson et al., 2014; Horrigan, 1968; Tumiwa & Tuegeh, 2019)	Financial performance
(Hoogendoorn et al., 2019; Kirkwood & Walton, 2010b; Manesh & Rialp-Criado, 2019; Tantayanubutr & Panjakajornsak, 2017)	Eco-innovation and financial performance
(Bae & Chang, 2012; Clark, 1992; Hendriani et al., 2019; Koh et al., 2009; Swanson et al., 1978)	Non-financial performance
(Alraja et al., 2022; Ben Amara & Chen, 2021; Corazza et al., 2022; El Harbi et al., 2011; Fitria & Yuliana, 2018; Peralta et al., 2019; Tantayanubutr & Panjakajornsak, 2017; Zhao et al., 2020)	Eco-innovation and Non-financial performance

Source: Author archives data processing, 2023.

2.2.2. Internal Factor

Internal factor reflects a business's strengths or weaknesses and can also reflect the owner management's ability. The internal factor shows the strength of resources, including all aspects of material or non-material, to run a business and its functions for commercial

production (F. R. David & David, 2017). Internal environment study also includes the owner's ability to optimize existing manufacturing processes, the potential to expand into new markets, and financial management. As a result, the internal factor can be defined as a factor that is directly tied to the business conditions. In line with that, according to Kim (2020) and Dess (1987), the internal factor is the organizational situation within a business, which intends to determine an organization's comparative strengths and weaknesses to its competitors.

The strength of MSMEs lies in their uniqueness, making them very difficult for competitors to imitate. Entrepreneurial skills that are hereditary are the key to the uniqueness of a business (Staniewski, 2016). The strength of a business can be in the form of unique competencies, sufficient financial resources, superior skills, good business image, superiority, and efficiency in production (F. R. David & David, 2017). These strengths are an effort to overcome existing weaknesses such as the absence of a clear strategy, unfavorable competitive position, obsolete facilities, lack of functional managerial capabilities, narrow product lines, poor business image, etc. (Porter, 1976, 1979).

The most crucial weaknesses in small businesses are self-satisfaction because they are affected by temporary success, which makes small businesses reluctant to adapt to existing dynamic changes (M. Beckmann et al., 2021; Tumiwa, 2015). A good entrepreneur is a person who is never satisfied and always positions himself in an uncomfortable situation.

There are several aspects in internal factors in MSMEs, as follow:

2.2.2.1. Aspects of Human Resources (HR)

Business performance depends on human resources (HR) quality. All organizations or businesses must invest in human resource development to achieve maximum productivity. Maximum productivity will affect performance, also determined by the characteristics of productive human resources, which are constructive, confidence, a sense of responsibility, a love for their work, a long-term outlook, and can solve problems (Horowitz & Sherman, 1980). Another opinion that characteristics of productive HR are intelligence, quick learning, professionally competent, creative and innovative, understanding the task, learning smart, using logic, efficient, not easily stuck in work, always looking for improvements, but knowing when to stop, considered valuable by his superiors, having a record of achievement the good, and always improve themselves (Datta et al., 2005) . HR is seen as an investment, if managed with proper planning, will provide rewards for the business with higher performance (Bonner et al., 2022).

The indicator of HR in this dissertation is described as follows:

2.2.2.1.1. Education and Experience

Indicators to determine the HR competencies must possess by businesses is levels of education and experience. The better the education, the higher their ability to think ahead (Kindangen et al., 2019). Besides formal education, training is importance to develop human capital, especially for an entrepreneur in agricultural business (Kómíves et al., 2019). It is difficult to make clear distinctions between education and training because both are processes of learning activities that transfer knowledge and skills from the source to the recipient. As a result, the major goal of education and training is to get business experience.

2.2.2.1.2. Working Hour

Working hours determine business success (Collewet & Sauermann, 2017; Kindangen et al., 2019). They stated that the flow of work time is the number of hours to perform input into production. Working hours definition is closely related to working. A business loses competitive opportunities if there is no consistency in working hours (Smith & Zagelmeyer, 2010).

The obstacle that becomes a barrier to the consistency of working hours for MSME entrepreneurs is no standard working hours like typical office hours in a big organization or company. Kirkwood and Tootell (2008) stated that working hours are the period to do a job day and night. Logically, the more hours an entrepreneur spends working will produce more output for the business. The more quantity of work, the better the quality of the products produced, and the more profitable a business (Stephen et al., 2009). However, some previous studies found that excessive work time can cause a business to be hampered by several problems, such as family problems (Kirkwood & Tootell, 2008).

By organizing the activities, an entrepreneur can save time and work. Working hours are part of the four organizational factors that are a potential source of worker stress at work (Lundstrom et al., 2002). Ozel (2001) state that there are several causes of work stress, one of which is the limited time to do work. According to Yager (1986), someone can become a workaholic.

Therefore, this dissertation concludes that the impediment to consistent working hours is the lack of regular working hours, such as normal office hours in a large organization or firm. As a result, working hours can be any time of day or night. Logically, the more hours an entrepreneur works, the more output for the business. The greater the volume of labour, the higher the quality of the products produced, and the more profitable the firm.

2.2.2.2. Financial Capital Aspect

Other internal factors such as marketing and production consider that money/profit is not everything in a business. However, it must be understood that money in a business is vital (Veasey et al., 2002). The problem is not about the essence of capital because its existence is needed, but how to manage capital optimally to run the business. Financial capital consists of own wealth, family wealth, savings, donations, grants, relatives, and others (Dunn & Holtz-Eakin, 2000). Yet, own capital is quite small, which is why entrepreneurs do business (Hoogendoorn et al., 2019; Kirkwood & Walton, 2010b; Rena et al., 2022). The most important details are that MSMEs need loan capital/credit to survive and develop their business (Tumiwa & Tuegeh, 2019), and that loan capital is not limited and is available in large quantities. Loan capital can be obtained from banks, financial institutions, and non-financial companies (Boutillier, 2020; Sonne, 2012). Financial factors will be very influential in the performance of SMEs, as motivation to work harder to pay off debt will increase performance, while private capital will reduce the owner's motivation and place the owner in a comfort zone.

2.2.2.3. Market and Marketing Aspect

Yeung and Ennew (2000) emphasize profitability, which implies that whatever the MSMEs do to satisfy the customer must return to the primary goal of profitability. This understanding means MSMEs are not allowed to establish good relationships with customers to satisfy their needs by sacrificing profits (Gilmore, 2011). The most powerful tools dealing in MSMEs related to marketing is pricing strategy (Kienzler & Kowalkowski, 2017). Price is the most important factor related to income of local people in rural areas. Competitive prices will increase consumer trust, loyalty, etc. Therefore, whatever the entrepreneur does, they must remain within the framework of generating profit. To obtain customer satisfaction without sacrificing profits, MSMEs must synchronize market information with customer and competitor information (Weerawardena & O'Cass, 2004). The technological and industrial revolution has raised the ecological concern among the people, leading to an increase in demand for green products and services (Tuegeh et al., 2021; Tumiwa et al., 2022). The main keyword is green marketing practice as an umbrella term incorporating various green business activities such as design, packaging, eco-labeling, green pricing, and green advertisement (Kushwaha & Sharma, 2017). These concepts are taking place due to changes in the consumption pattern and awareness of environmental problems among consumers. They also match the eco-agropreneurship concept as social and ecological drivers.

2.2.2.4. Production Aspect

MSMEs must be able to produce the product as expected by customers using a suitable production system. Production is the ability to produce in quantities and qualities determined based on customer needs (Creed, 2001). Production not only creates products as outputs but also uses various factors of production as inputs. There are three main components in production theory according to Pindyck & Rubinfeld (2018): input, process, and output. The production process is a way, method, and technique of how the production is carried out, and is an activity to create and add utility of goods and services with an emphasis on environmentally friendly production (Božić & Botrić, 2017; Putri et al., 2019). In rural areas, the business position is vital in business operations, as most businesses are processing industries, including culinary businesses. The fundamental production elements in the production of MSMEs in coastal areas in rural areas depend on two things: business position and production capacity.

All the theory used in this dissertation for internal factors are summarized in the table 4:

Table 4. Internal Factors Theory

Author	Theory Use in this Dissertation
(B. Beckmann et al., 2016; F. R. David & David, 2017; Dess, 1987; Dessler, 2015; Kim, 2020; Porter, 1976, 1979; Robbins & Judge, 2018; Staniewski, 2016; Tumiwa, 2015)	Organizational and Strategic Management
(Bonner et al., 2022; Collewet & Sauermann, 2017; Datta et al., 2005; Dessler, 2015; Horowitz & Sherman, 1980; Kindangen et al., 2019; Kirkwood & Tootell, 2008; Kómíves et al., 2019; Lundstrom et al., 2002; Ozel, 2001; Smith & Zagelmeyer, 2010; Stephen et al., 2009; Yager, 1986)	Human resource, education, skill, and working hours.
(Boutillier, 2020; Dunn & Holtz-Eakin, 2000; Hoogendoorn et al., 2019; Kirkwood & Walton, 2010b; Rena et al., 2022; Sonne, 2012; Tumiwa & Tuegeh, 2019; Veasey et al., 2002)	Financial Capital
(Gilmore, 2011; Kienzler & Kowalkowski, 2017; Kushwaha & Sharma, 2017; Weerawardena & O’Cass, 2004; Yeung & Ennew, 2000)	Marketing

(Božić & Botrić, 2017; Creed, 2001; Production
Pindyck & Rubinfeld, 2018; Putri et
al., 2019)

Source: Author archives data processing, 2023.

2.2.3. External Factor

In the business, both MSMEs and large enterprises must deal with external factors which are opportunities and threats (Ajzen, 1991; F. R. David & David, 2017; Robbins & Judge, 2018). External factors can influence the business directly (Strielkowski, 2012). External factors can also be an operational environment that includes competitive positions, customer profiles, suppliers, creditors, and the labor market. According to Porter (Porter, 1976, 1979), there are five forces that shape competition in the industry. In addition to the theory, another factor is the macro-economic factor, such as credit, interest rates, and taxes (Fernández-Olmos & Ramírez-Alesón, 2017). Although the business is assumed to be reluctant to change, on the other hand, it also can adapt to shifts in external aspects, which allows the organization to survive (Taipale-Eräväla et al., 2014). To survive, business has to manage strategy to carry the sustainability concept. Based on the results of research from Banham (Banham, 2010) that, several indicators must be considered in analyzing the external environment at MSMEs, such as technological advances, customers expectation, suppliers, competitors, regulatory change (Government), and increasing competition.

2.2.3.1. Government Assistance

MSMEs are expected to contribute to national economic development goals, such as economic growth, employment opportunities, and foreign exchange. This dissertation uses evolutionary game theory, and organizational and institutional theory, to analyze corporate green behavior strategy selection and governments' role (Yang et al., 2021). Using the previously discussed literature, this dissertation discovered that government regulation can encourage businesses to adopt green practices. Evolutionary game theory is a new theory that combines game theory and the analysis of the dynamic evolution process, and it can adequately depict and represent the dynamic equilibrium of game behavior growth amongst groups with limited rationality (Mankiw, 2017; Samuelson, 1948).

The government should not make a strategy for a company, but the government must support the strategy carried out by the business, especially for small businesses (Thiers, 2002; Udiyana et al., 2018). The government should provide a good policy that favors for the benefit for the small business to improve the performance specifically to the environmental preservation (Ben Amara & Chen, 2022). Halim et al. (2019) defined

government policy as the sum of activities of governments, whether acting directly or through agents, as it has influenced the lives of citizens.

In Indonesia, these policies are often linked to government action, leading to increased investment and poverty reduction. MSMEs are essential for businesses to grow the business climate and provide funding, infrastructure, information, partnerships, and licensing facilities. The government is establishing MSME empowerment policies to facilitate bank credit, guarantees for non-bank institutions, loans, subsidies, and other types of financing. Standardization applied by importing countries or the European Union (EU) or global (WTO) is essential for sustainable competitiveness, but there are issues such as labor and the environment (green product). All these steps cannot be done alone by most MSMEs, especially Small Businesses and in rural areas.

Thus, government can support in two ways: indirect intervention and direct intervention. Indirectly intervention is a form of the macroeconomy, which is heavily influenced by the business climate, while direct intervention is an effort to help MSMEs. The government also acts as a business catalyst, providing special credit schemes and various types of training, as well as a stimulant to accelerate the development process. Regulation is a set of rules intended to provide protection and benefits for society and to reduce unemployment, fight poverty, and income distribution.

2.2.3.2. Customer

According to Parasuraman (1991), customers are individuals or groups who are accustomed to buying a product, good and service, based on their decision behavior based on price. According to Kotler (1999), customer satisfaction can be measured using customer's perception with several indicators such as product quality, cost, emotional, price perception, and service quality (Parasuraman et al., 1991; Zeithaml, 2000). In the same opinion, Kotler et al. (2018) stated that competitive strategies could satisfy customers and even help businesses compete. MSMEs must provide useful and integrated tools for managing technology infrastructure to improve performance through a comprehensive choice of strategic business applications also for the environmental preservation (Ben Amara & Chen, 2022).

Based on the organizational and institutional theory, consumers place a high value on environmental issues and use environmental performance as a critical metric to assess the legitimacy or reputation of businesses, putting normative pressure on them (Rui & Lu, 2021). In the recent new paradigm, consumers who value environmental issues may

consider environmental protection a critical factor in the choice of confidence (Nagy et al., 2022). Customers may assess if the enterprise's production and operation processes harm the community's and employees' health or if the business's products include dangerous compounds. To meet the environmental requirements from customers, businesses seek to achieve environmental qualification certification and licensure, implement green supply chain management, and manufacture products with low pollution and energy consumption. Customers can also provide information and comments on green enterprise innovation. Thus, businesses must implement green technology innovation based on market demand when entering a market.

2.2.3.3. Competitor

In competition, competitors are the main actors that must be considered by MSMEs (Bengtsson & Kock, 1999). Competitors are a form of threat from external factors yet can be turned into opportunities. Most MSMEs usually use competitors as an opportunity to increase sales volume by imitating competitors' strategies, gathering information about competitors, and combining them with levels of satisfaction from customers of competing products (Fann & Smeltzer, 1989). It is essential that MSMEs to analyze competitive products to determine the position that are successful and can be a valuable source of ideas for product design and production processes (Chaganti et al., 1989; Rhim & Cooper, 2005). According to organizational and institutional theory, competitors' pro-environmental exert some pressure on enterprises to imitate (Toinpre et al., 2018). The main reason is that the competitors' green products are less expensive (Rui & Lu, 2021; Schaltegger et al., 2019). The market will favor the benefits of energy savings and consumption reduction. To deal with market competition, businesses are more likely to imitate relevant technologies, products, or strategies from their competitors, which improves their competitiveness. From the standpoint of organizational legitimacy, the improvement in legitimacy brought about by competitors' environmental concerns and green innovation threatens the legitimacy of other firms. As a result, businesses tend to engage in similar green innovation behaviors to gain greater comparative legitimacy. Furthermore, due to knowledge spillover from green innovation, successful competitors serve as a model for their other competitors. Learning from and imitating successful green innovation behaviors of competitors can assist businesses in lowering the risk and difficulty of doing green/eco-innovation.

2.2.3.4. Suppliers

A supplier is a company or individual providing the resources needed to produce certain goods and services. Most businesses' survival and chain of profit depend on the supplier (Wei et al., 2013). Supplier and their products or services determine world-class business success (P. M. Simpson et al., 2002). Thus, in the concept of the supply chain in the MSMEs, the supplier is one part of the supply chain that is very significant and influences the businesses' factories, which must be close to the supplier location (Giannakis, 2007). If the response to the fulfillment of the factory demand is compromised because the supplier is less responsible for factory raw materials, it will cause serious problems. One of the problems is stockout or lead time, which will undoubtedly ruin the MSMEs' factory's production.

As a result, suppliers are a vital component of the firm and significantly impact the company's survival and for the environmental preservation (Ben Amara & Chen, 2022). In practice, most small entrepreneurs tend to fulfill their business raw material needs without involving suppliers. However, when there is a surge in demand or an abundance of marine products, coastal MEMEs need external workers' help, which can be considered labor suppliers. These certain individuals are hired to fulfill the business need due to the situational condition, and these conditions are happening a lot in the coastal area due to the unpredictable force of nature and season.

This dissertation summarized all the external theories used into table 4 as follows:

Table 5. External Factors Theory

Author	Theory Use in this Dissertation
(Ajzen, 1991; Banham, 2010; F. R. David & David, 2017; Fernández-Olmos & Ramírez-Alesón, 2017; Porter, 1976, 1979; Robbins & Judge, 2018; Rui & Lu, 2021; Strielkowski, 2012; Taipale-Eräväla et al., 2014)	Organizational, institutional, and strategic management theory.
(Ben Amara & Chen, 2022; Halim et al., 2019; Mankiw, 2017; Thiers, 2002; Udiyana et al., 2018; Yang et al., 2021)	Government assistance
(Ben Amara & Chen, 2022; Kotler, 1999; Kotler et al., 2018; Nagy et al., 2022; Parasuraman et al., 1991; Rui & Lu, 2021; Zeithaml, 2000)	Customer
(Bengtsson & Kock, 1999; Chaganti et al., 1989; Fann & Smeltzer, 1989;	Competitors

Rhim & Cooper, 2005; Rui & Lu, 2021; Schaltegger et al., 2019; Toinpre et al., 2018)

(Ben Amara & Chen, 2022; Supplier
Giannakis, 2007; P. M. Simpson et al., 2002; Wei et al., 2013)

Source: Author archives data processing, 2023.

2.3. Coastal Community in Rural Area

2.3.1. MSMEs in Rural Area

The definition of MSMEs is different in each country. In Indonesia, MSMEs criteria are considered on employees' number, assets, and sales volume (Tumiwa et al., 2020). According to the Indonesian Government law by Act No. 20 of 2008 about Micro, Small and Medium Enterprise, the MSMEs can be defined as follows (Ministry of Industry, 2018; Tumiwa et al., 2020, 2022; Tumiwa & Nagy, 2021):

- Small Enterprise: a productive economic activity that stand alone, which is conducted by an entity not branch company, that have a net worth > 50 million to 500 million rupiah (IDR), excluding land and buildings or annual sales of 300 million to 2.5 billion IDR.
- Medium-sized enterprises: productive economic activities that stand alone, which is done by entity with total net assets >500 million up to 10 billion, excluding land and buildings or annual sales >2.5 billion to 150 billion IDR

The Bureau of Indonesian Statistics has criteria for small businesses according to the employee number. If employees 5 to 19 people and if less than 5 people classed household business (Micro), and medium enterprises consist of 20 to 99 people.

In term of assets, the Indonesian Cooperative Department defines Micro, Small, and Medium Enterprises (MSME, 2004) as economic activities by the following criteria:

- Have a net worth of Rp 200,000,000 - (two hundred million IDR), not including land and buildings.
- Have annual sales turnover not exceeding Rp 1,000,000,000 - (one billion IDR).
- An Indonesian citizen owns them.
- Independent, with no subsidiary or branch company owned, managed, or directly or indirectly associated with medium or big businesses.

Coastal areas are land areas that border the sea. Land boundaries encompass places that are inundated or not by water but are nonetheless affected by maritime processes. Boundaries at sea, on the other hand, are areas impacted by natural processes on land, such as

sedimentation and the flow of freshwater into the sea, as well as sea regions affected by human activity on land (Paruntu et al., 2019; Paruntu & Tumiwa, 2016). The socioeconomic characteristics of coastal communities are intimately tied to the water (Fröcklin et al., 2018; Mylona, 2020). Similarly, these sorts of livelihoods make use of natural resources or provide environmental services. Thus, coastal MSMEs are a set of coastal enterprises that make a living and meet their needs using coastal resources.

The community in the coastal area influences the MSMEs. Haber and Reichel (2007) argues that the surrounding natural environment will shape the nature and behavior of the community. The physical and biological environment influences social interactions, the distribution of social roles, values, social norms, attitudes, and institutionalized perceptions in society. Social values that develop from the interpretation of the benefits and functions of the environment can drive social change and entrepreneurial skill (Morgan et al., 2010). Coastal communities tend to be aggressive, because the conditions of the coastal environment are hot and open. Coastal community families are easily provoked, and one of the common habits is that the ease of earning money makes their lives more consumptive and lazy (Paruntu et al., 2019; Paruntu & Tumiwa, 2016). Various social problems in managing the social environment in the coastal area are the development of conflict or social friction, inequality in socio-economic access, increased unemployment, increased poverty, increased social-economic inequality, the disparity in access to resource management, increased lifestyle (consumptive), lack protection of the rights of local/traditional communities and social capital, changes in values, fading of local culture, weak social control, changes in population dynamics, health problems, and even more about environmental damage (Hendriani et al., 2019; Suharti et al., 2016). Coastal communities referred to in this description are those who live and settle in the coastal areas of the sea with activities as entrepreneurs of fisheries, agriculture, tourism, and culinary (Saroyo & Mulyati, 2015). Therefore, the coastal communities referred to in this description are traditional entrepreneurs who, due to their powerlessness in all aspects, both material, knowledge, and technology, making them living in poverty and disadvantaged.

2.3.2. Traditional Skill and Knowledge

Skills are behaviors related to tasks that can be mastered through learning and improved through training and other people's help. Skills refer to a person's ability to do an activity and to control behavior (Chell, 2013). Employees who have excellent work skills will accelerate the achievement of organizational goals. Conversely, unskilled employees will

slow down the organization's goals (Kurt, 2019; Rodrik, 2018; Zhang et al., 2020). Skill can be defined as ability to do specific physical or mental tasks (Morgan et al., 2010). Mental competence or cognitive skills include analytical and conceptual thinking (Armstrong et al., 2012). Meanwhile, according to Winarno et al. (2019) and Tannenbaum (1997), skills are things or steps mastered from training or continuously doing. According to Gedik et al. (2015), the characteristics of an excellent skilled person are knowing and understanding what needs to be done; like what is do; have fast and precise work movements; rarely making mistakes and errors in work; already have specific tips in carrying out the work; productivity increases than usual (Hasan et al., 2021; Horowitz & Sherman, 1980; Liboni et al., 2019). Several unique abilities are divided based on a civilization's geographical location (Fernhaber et al., 2014).

The economic potential of coastal resources can be interpreted as economic activities carried out in coastal areas that use coastal resources, including productive sectors such as fishery, tourism, mining and energy, sea transportation, and other maritime activities (Paruntu & Tumiwa, 2016). MSME entrepreneurs in rural areas need to have insight into local wisdom. This insight is needed to use local resources based on the existing culture. For example, the local community with Hygera Lai culture is held every two years as a closed and open ritual at the coastal area Petuanan, coordinated by village officials and the church such as the Pastor or the Priest (Karuna & Serpara, 2021; Kissiya & Biczó, 2022). Another example is the activity "Tobelo Dalam" (Tamalene et al., 2014), "Ulur-Ulur" (Kurniawati et al., 2020), etc., that purpose to synergize between myth and science (Wibowo et al., 2021).

The term local wisdom is often referred to as indigenous wisdom, traditional wisdom, and indigenous inventions, local indigenous knowledge, local genius (Agatha, 2016; Green & Raygorodetsky, 2010; Wilson et al., 2018), Hobsbawm and Ranger (2012) used the term "invented tradition". The word indigenous indicates a person born, developed, or produced naturally and natively in an area or place. The birth and development of an idea result from the discovery of the creator (invention) of individuals in society as a response to the needs and interpretation of events, occurrences, or phenomena from the environment internally and externally. Furthermore, Nasser et al. (2021) also proposes the meaning of local wisdom, as all forms of ethics, insight, belief, and understanding that guide human behavior in life in ecological communities (Alonso, 2015). Traditional knowledge includes habits, perceptions, norms, and culture that are obeyed by a local community and live from generation to generation (Alonso, 2015; Merugula et al., 2021). Meanwhile, Paruntu & Tumiwa (2016); Karuna & Serpara (2021); and Tymoczko (2001) argue that regional

cultural elements are potential local geniuses because they have proven their survival ability until now.

Its characteristics are as follows:

- Able to withstand foreign cultures
- Can accommodate elements of foreign culture
- Have the ability to synchronize the foreign culture elements into traditional culture
- Have the ability to control
- Able to give direction to cultural development

Furthermore, wisdom can also be understood as everything that is based on knowledge, recognized by reason, and considered suitable by religious provisions. Customs are tested naturally and are reasonable because they are social actions that are repeatedly reinforced. Movement naturally occurs voluntarily because it is considered exemplary or contains goodness. Bad customs only occur when there is coercion by the ruler.

Thus, local wisdom can be defined as a wealth of local culture that contains the virtues of life, a way of life that accommodates wisdom and the wisdom of life. In Indonesia, local wisdom does not only apply locally to particular cultures or ethnicities but can be said to be cross-cultural or cross-ethnic to form national cultural values. Almost every local culture in the archipelago is known for local wisdom that teaches mutual cooperation, tolerance, work ethic, and so on (Crawford et al., 2004; Touwe, 2020; Tymoczko, 2001). In general, the ethics and moral values contained in local wisdom are taught and passed down from generation to generation both through oral literature and manuscripts (Lumempouw et al., 2021; Rofiq et al., 2019). Local wisdom is ideas/views, knowledge, beliefs, values, norms, morals, and ethics, institutions (involving norms, practices or patterned actions, organizations), and technology that contribute to the creation and maintenance of conditions for community life in various fields, progress, and maintenance of the condition of environmental ecosystems and resources so that their utilization by human groups or communities there as one component of the ecosystem sustainably takes place (Fithriyana & Fahmy, 2022).

The concept of local economic development in the coastal areas must be sustainable. Coastal areas are multi-use because their characteristics and dynamics are interrelated, and people's livelihood preferences vary. The utilization of coastal resources that occurs until now still tends to ignore pollution and environmental damage as well as excessive natural resource extraction, which impacts environmental damage.

2.3.3. Agropreneurship in Coastal Area

In the agrobusiness sector, entrepreneurs with a high education level and a relatively young age tend to be more risk-taking than entrepreneurs with a lower level of education and older age (Kömíves et al., 2019). Musa et al. (2021) stated that agricultural sector entrepreneurs have various characteristics, which can be in the form of demographic characteristics and social community. According to Hrivnák et al. (2021), the characteristics of the entrepreneur in agroindustry that can be observed include age, education, area of business, land as an asset, and experience. Successful agricultural entrepreneurs generally have competencies such as knowledge, skills, and individual qualities (Morgan et al., 2010; Yoshino & Morgan, 2017). This individual quality can be as attitudes, motivations, values, and behavior (Abdul Al & Mostafa, 2019; Alasadi & Abdelrahim, 2008). The efficiency of the production process and logistics, which are classified based on technical and economic efficiency, indicate the success of a farming business (Sievanen et al., 2005; Zamroni et al., 2011). The capability assessment can be measured using effectiveness, efficiency, and price reasonableness (Saroyo & Mulyati, 2015). As a result, this dissertation defined agrobusiness success as the development of institutions and human resources; the creation of jobs through agricultural business diversification development; the intensification and extensification of farming; increased incentives for farming through increased production and efficiency of farming; the creation and development of organic agriculture towards a green economy; and the development of rural areas.

Coastal area theories are summarized on table 6:

Table 6. Coastal Area Theory

Author	Theory Use in this Dissertation
(Ministry of Industry, 2018; Tumiwa et al., 2020; Tumiwa & Nagy, 2021)	MSMEs size
(Haber & Reichel, 2007; Kissiya & Biczó, 2022; Kurniawati et al., 2020; Paruntu et al., 2019; Paruntu & Tumiwa, 2016; Tamalene et al., 2014; Wibowo et al., 2021)	Human and nature
(Fröcklin et al., 2018; Hendriani et al., 2019; Morgan et al., 2010; Mylona, 2020; Saroyo & Mulyati, 2015; Suharti et al., 2016)	Socioeconomic coastal community
(Agatha, 2016; Armstrong et al., 2012; Chell, 2013; Das, 2021; Fernhaber et al., 2014; Gedik et al., 2015; Green & Raygorodetsky,	Local skill and knowledge

2010; Hobsbawm & Range, 2012; Horowitz & Sherman, 1980; Karuna & Serpara, 2021; Morgan et al., 2010; Tannenbaum, 1997; Tymoczko, 2001; Wilson et al., 2018; Winarno et al., 2019)	
(Alonso, 2015; Crawford et al., 2004; Fithriyana & Fahmy, 2022; Lumempouw et al., 2021; Rofiq et al., 2019; Touwe, 2020)	Traditional knowledge, religion, and resources
(Abdul Al & Mostafa, 2019; Alasadi & Abdelrahim, 2008; Hrivnák et al., 2021; Musa et al., 2021; Saroyo & Mulyati, 2015; Sievanen et al., 2005; Yoshino & Morgan, 2017; Zamroni et al., 2011)	Agropreneurship in coastal area

Source: Author archives data processing, 2023.

2.4. Current Economics Situation Awareness

The world economy is directly impacted by the COVID-19 epidemic. To halt the spread of the virus, the government is taking various measures such as quarantine, isolation, and travel restrictions. These measures limit worker availability and productivity in all economic sectors in the short term, causing unemployment to rise (Kovács et al., 2021; Rodrigues et al., 2021; Tisdell, 2020). Moreover, government instructions regarding quarantine are poorly executed and implemented unevenly. In addition, the income obtained by labor is affected by income polarization (Bonacini et al., 2021; E. Han et al., 2020). Schools and universities worldwide are closed, and the demand for commodities and manufactured products decreases (Ibn-Mohammed et al., 2021). In Indonesia, the Government launched a measurement known as social distancing Large-Scale Social Restrictions (LSSR), which were implemented in multiple regions, starting in the capital city of Jakarta on April 10th, 2020 (Melsom, 2020; S. G. Purnama & Susanna, 2020).

Currently, the world is facing a "critical shortage" of various kinds of medical supplies not only caused by COVID-19 but also by the effect of Russian and Ukraine Conflict (R-YouC) (Bakst et al., 2022; EFSA, 2022; Leon et al., 2022). The food sector and daily needs are also experiencing great demand due to panic buying and hoarding. Still impacted by the COVID-19 and R-YouC, GDP is estimated to gradual and partial recovery by the end of 2021, now fall free to the bottom. This situation significantly impacts those countries dependent on the resources from Russia and Ukraine, which is most of Europe.

In Indonesia, the economy has contracted since the 1997 Asian crisis for the first time (Berry et al., 2001; Sangsubhan & Basri, 2012). The socio-economic consequences of a recession

will be severe, especially for the lower middle class, who are at significant risk of returning to poverty (Albert et al., 2020; Suryahadi et al., 2020). A slightly strange thing that happened in the midst of the R-YouC was the scarcity of cooking oil. At first, Indonesia's cooking oil production was sufficient, and even one of the world's exporters suddenly suffered from a shortage. There are allegations of hoarding by the food mafia and the use of palm oil as biodiesel. This hoarding factor is inseparable from the supply and demand mechanism. As one of Indonesia's important commodities, cooking oil significantly contributes to the Indonesian Consumer Price Index (CPI) because cooking oil is one of the products people consume daily (Indriyadi, 2022; Mahaputra & Saputra, 2022).

The government is also taking quick countermeasures to prevent a worse impact. The government has prepared a cooking oil subsidy scheme. The subsidy of cooking oil on the market is based on the highest retail price. The government has also implemented the same subsidy as compensation for businesses affected by Covid-19 (Albert et al., 2020; Munandar, 2020). Besides the tax incentives, the Government has launched fiscal incentives such as providing a stimulus of 8.5 trillion IDR to strengthen the domestic economy through on tourism sector. The Government then launched a further stimulus worth 22.5 trillion IDR in the form of fiscal and non-fiscal policies to support the industrial sector and facilitate export-import (Olivia et al., 2020). As mentioned before, the Government imposed LSSR and issued a stimulus of 405.1 trillion IDR to compensate for the health sector. The funds will be allocated for several government spending activities related to pandemic control (Hidayatullah et al., 2020; Munandar, 2020), such as recovery programs for credit restructuring and guarantees as well as financing for MSMEs, electricity costs, and support for basic necessities.

Implementing these regulations and all the compensations creates a 'new normal' life, where all community activities must follow health protocols, including business activities. A new normal is a new life in order to create a productive society, including MSMEs.

Although it causes panic and economic downturn, COVID-19 has a positive impact on the community, such as: washing hands more frequently, being aware of environmental hygiene, changing healthy eating patterns, exercising, and praying. In uncertainty, there are always good things behind it, depending on how the mindset responds (Dheer et al., 2021; S. Liu et al., 2021; S. G. Purnama & Susanna, 2020). Responding to R-YouC, the Indonesian president Jokowi made a working visit to the two countries to try to reconcile the conditions and establish cooperative relations (Adwani, 2022). This situation generated other business opportunities. In fact, with this uncertain situation, psychological suffering

in the form of burn-out, experiential deprivation, and ecological anxiety encourages ecopreneurs to adopt an independent lifestyle, creative agrarian physical work, and regenerative agricultural practices (Vlasov et al., 2021). It can be concluded that, although Covid-19 and R-YouC have a negative impact, on the other hand, they have a positive impact such as creating awareness.

Furthermore, during difficult times, all levels of society, such as public figures and social media influencers, have highlighted the hope that grows from several movements that started in the community (Prainsack, 2020; Prainsack & Buyx, 2012). Expectations and concerns continuously campaigned in various media create a sense of empathy. This empathy is increasingly widespread and is carried out through digital social media platforms, especially during this pandemic. This movement begins with an altruistic approach as a helping behavior sincerely, purely, and without expecting anything in return from others or taking advantage. This concept is in line with the philosophy of Dr. Sam Ratulangi: "Sitou Timou Tomou Tou," which means: that humans live to support others. Altruism as an idea of thought and practice so far has only been considered as a good deed by humans as a moral responsibility that exists in humans and is manifested in social life but has not become a concept that can be used as a basis for the development of intellectual research (Pangalila et al., 2018).

Several behavioral theories can explain this new habit in balancing health. According to Ajzen's (1991) Theory of Planned Behavior, individual behavior is driven by intention, which is influenced by behavioral beliefs, normative beliefs, and control beliefs. In addition, supporting factors such as personal, social, and informational factors are factors that influence individual behavior. Behavior to prevent disease is also described in the protection motivation theory, which states that notification of health information can change individual behavior (Fitriasari, 2020; D. Lee et al., 2022). The theory developed by Marinthe et al. (2020) and Martin et al. (2007) explains that from the information obtained, motivation to protect oneself depends on an assessment of threats called threat appraisal and strategies in dealing with threats or called coping appraisal. In these situations, the desire to help others with awareness of the global economic situation can motivate entrepreneurs to prioritize environmental issues and care for others (Amankwah & Sesen, 2021; Bacq & Lumpkin, 2021; Belitski et al., 2022; Liñán & Jaén, 2022; Ruiz-Rosa et al., 2020). Stimulus to help others during Covid-19 and R-YouC cannot be paired with entrepreneurial motivation measurement, but it can be a moderating variable in the eco-agropreneurship concept. Unlike technological awareness, the economic crisis awareness due to Covid-19 and R-

YouC is personal and seasonal. However, this awareness can be measured by the following indicators (Guiliani et al., 2021; S. Liu et al., 2021; L. Lu et al., 2021; Lunn et al., 2020; Oosterhoff et al., 2020; Ozbay & Celikel, 2022; Ruiz-Rosa et al., 2020; Wolf et al., 2020):

- Awareness to take care of own health
- Awareness to keep distance
- Awareness to help others
- Keep Trying to Work More Creatively and Innovatively
- Looking for Cheap Capital Sources and Restructuring Existing Credit
- Through Local Communities Forming Economic Strength
- Information awareness:
 - reduced market demand
 - needs that are in shortage

Economics awareness theories are summarized on table 7:

Table 7. Economic Awareness Theory

Author	Theory Use in this Dissertation
(Ajzen, 1991; Amankwah & Sesen, 2021; Marinthe et al., 2020; Martin et al., 2007; Pangalila et al., 2018; Prainsack, 2020; Prainsack & Buyx, 2012)	Behavioral theory and Motivation theory
(Marinthe et al., 2020; Martin et al., 2007)	
(Bakst et al., 2022; Bonacini et al., 2021; European Food Safety Authority (EFSA), 2022; Indriyadi, 2022; Kovács et al., 2021; Leon et al., 2022; Mahaputra & Saputra, 2022; Rodrigues et al., 2021; Tisdell, 2020)	Current economic situation
(Albert et al., 2020; E. Han et al., 2020; Hidayatullah et al., 2020; Ibn-Mohammed et al., 2021; Melsom, 2020; Munandar, 2020; Olivia et al., 2020; S. G. Purnama & Susanna, 2020; Suryahadi et al., 2020)	Government action and measurement
(Adwani, 2022; Dheer et al., 2021; Fitriyanti, 2020; D. Lee et al., 2022; S. Liu et al., 2021; S. G. Purnama & Susanna, 2020; Vlasov et al., 2021)	Lessons from pandemic and R-YouC
(Bacq & Lumpkin, 2021; Belitski et al., 2022; Guiliani et al., 2021; Liñán	Inducement to environmental preservation

& Jaén, 2022; Lunn et al., 2020;
Oosterhoff et al., 2020; Ozbay &
Celikel, 2022; Ruiz-Rosa et al.,
2020; Wolf et al., 2020)

Source: Author archives data processing, 2023.

3. MATERIAL AND METHOD

3.1 Type of Research

The mixed method approach is used in this dissertation. The first method is qualitative content analysis, which employs SLR to define the literature on the eco-agropreneurship concept. SLR technique's purpose is to obtain reproducible and valid results for analyzing and understanding all available published research studies on a specific topic. The SLR process begins with identifying its conceptual boundaries and setting the research question. Then, the articles are downloaded based on the criteria. The downloaded articles were then subjected to content analysis as a research method for collecting data and producing objective inferences based on specific coding strategies (Hsieh & Shannon, 2005; Stemler, 2001). Each article's content is retrieved as a sentence or paragraph, and the coding scheme is based on an eco-agropreneurship theoretical concept.

Another approach is quantitative research will use an exploratory type of research. Sekaran and Bougie (2011) define a causal study of research as a study in which the researcher wants to investigate the cause of one or more problems. A casual study is focused on finding casual relationships between variables. A casual study seeks to discover the linkages between variables to determine how the dependent variable responds to changes in the independent variable in a research model.

3.2 Research Procedure

This research is divided into several phases. The first phase is elementary research. This first stage is research work done previously on a smaller scope of the research object. From several research work results, it is found that there are research gaps to be developed. Some of the previous research work used as research connections are as follows:

1. Tumiwa (2015). Analysis of the effect of education on household income through entrepreneurship a path analysis
2. Kindangen & Tumiwa (2015). Entrepreneurship and Employment in South East Minahasa Regency.
3. Paruntu & Tumiwa (2016). Community Model in Coastal Areas to Eradicate Poverty in South and East Bolaang Mongondow, North Sulawesi
4. Kindangen & Tumiwa (2017). Entrepreneurship and Household Income in Kotamobagu and Bolaang Mongondow.

5. Tumiwa & Paruntu (2017). The Analysis of Human Capital Building and Financial Assistance on Small Medium Size Enterprises Development in Manado and Tomohon.
6. Djibran, Saerang, and Tumiwa (2018). Analyzing The Influence of Motivational Factors as Antecedent Variable on Students Entrepreneurial Intention (Case Study on Faculty of Economics and Business Students Sam Ratulangi University)
7. Tumiwa & Tuegeh (2019). Microfinance and Financial Performance on SMEs in Manado – Indonesia
8. Murni, Tumiwa, & Ogi (2019). The Role of Internal Factors in Determining the Value of Manufacturing Company.
9. Kindangen, Tumiwa, & Sepang (2019). Poverty Alleviation in Urban Areas of North Sulawesi, Indonesia – The Role of Human Resources.
10. Paruntu, Darwisito, Rumengan, Sinjal, Wagey, & Tumiwa (2019). Mariculture Science and Technology for Fish Cultivation Community in South Motandoi Village, South Bolaang Mongondow Regency.
11. Tumiwa, Tuegeh, & Nagy (2020). Factor Influencing MSMEs Performance Measurement – A Literature Review.
12. Tumiwa (2020). Fiscal and Monetary Policies in Indonesia
13. Tumiwa & Nagy (2021). Micro, Small, and Medium Enterprises in Emerging Economies and Economic Transition: A Comparative Study Between Indonesia and Hungary.
14. Tumiwa, Tuegeh, Bittner, & Nagy (2022). The Challenges to Developing Smart Agricultural Village in the Industrial Revolution 4.0: The Case of Indonesia

These initial stages lead to the next stage, the theoretical review.

Based on the preliminary stages, this dissertation develops a substantial theory-based structural model of the interaction between latent variables. For this reason, a literature analysis is needed. The theoretical is stems from searching for articles in high-rank journal databases such as Scopus and WoS. Techniques, keywords, and syntax database search are described in chapter 4. The results of SLR found the definition of eco-agropreneurship concept based on the aggregate dimension and its measurement. Furthermore, SLR discovered a conceptual model of internal and external challenges of MSME performance as a driver of eco-agropreneurship. In addition to defining and measuring variables, a literature study is also used to determine the analytical tools and the approach used by

previous research. Based on the results of a literature review, it was found that modeling using SEM analysis tools is the right approach to test eco-agropreneurship models.

After getting all the definitions and measurements of variables based on previous research, a research questionnaire and indicators of variable measurement were compiled in the form of questions. This dissertation follows the research steps concerning data collection to avoid general common method bias (CMB) (Chin et al., 2012; Jakobsen & Jensen, 2015) and social desirability bias (SDB) (Grimm, 2010; Krumpal, 2013). In order to do that, the questionnaire is screened through Focus Group Discussion (FGD) with pioneer researchers, local government, and local leaders in eastern Indonesia (Chioncel et al., 2003; Suyono et al., 1981; Toner, 2009). The purpose of FDG consists is to determine whether the question is sensitive or to discuss any technical issue to get the respondents' best response and avoid social desirability bias. This FGD is also helpful for interviewers to get information about local wisdom or traditional knowledge, which is different in each region. The next step is a draft questionnaire based on comments and feedback from the FGD results tested on a small research group. Furthermore, the surveyors used the final version of the questionnaire as a structured question. These interviewers or surveyors come from academic circles at the university with competent research and data collection experience, mainly assistant professors or final-year students.

The next stage after the data collection is statistical analysis testing. Before statistical testing, the data were tabulated using the SPSS program and analyzed for outlier tests which is an observation in a data set that has a different pattern or value from other observations in the data set. Outlier is something rare or unusual observation that appears at one of the extreme points of most data. The extreme point in the observation is a value that is far or entirely different from most of the other values in the group (R. Chen, 2022; W. J. Dixon, 1953; Uher et al., 2022). For example, the value is too small or too large. This dissertation detects outliers using SPSS with the Standardized Residual Technique. The main advantage of using this standardized residual is that it is not affected by the unit of measure because everything is standardized. After making a res. variable, this dissertation will exclude from the data analysis if the observation residual is three times greater than the standard deviation or the standardized residual is greater than 3, the observation can be said to be an outlier.

After the outlier has been removed, the data is analyzed using descriptive analysis techniques to describe the distribution of research variables and respondents, which is gender, age, education, length of business, type of business, number of employees, and religion. Since the explanatory indicators of the aggregate dimension of eco-

agropreneurship based on the SLR are numerous, they will be reduced using factoring analysis .

The next step is PLS-SEM analysis using the SmartPLS program, where the results of designing the inner and outer models are estimated based on the Path, Loading, and Weight coefficients. The parameter estimation method in the PLS method is the ordinary least square method. The calculation process is carried out by interaction, where the interaction will stop if it has reached a convergent condition. Therefore, the outer and inner models are used to evaluate the goodness of fit model.

Based on the data analysis results, this dissertation compares the results of the findings with previous research to make implications and references for further research.

3.3 Research Object

The study will be conducted in coastal areas in several cities and regions in several provinces in Indonesia. The other agency involved in this study is the rural government in the province of North Sulawesi. Support from local rural officials is needed to record and assist the research team in the context of primary data collection in the field, especially in some villages with high crime rates. Cooperation from the village government is expected to be a mediation between the research team and MSMEs in the village, which tends to be distrustful and skeptical.

Based on the Ministry of Maritime Affairs and Fisheries (2018), coastal areas in Indonesia are divided into 17 provinces as follows :

- | | |
|-----------------------|------------------------|
| 1. Moluccas | 10. North Moluccas |
| 2. North Celebes | 11. Central Celebes |
| 3. West Celebes | 12. Gorontalo |
| 4. North Kalimantan | 13. South Kalimantan |
| 5. East Nusa Tenggara | 14. West Nusa Tenggara |
| 6. East Java | 15. Yogyakarta |
| 7. Lampung | 16. West Sumatra |
| 8. Central Java | 17. Central Kalimantan |
| 9. West Kalimantan | |

This dissertation uses coastal areas in eastern Indonesia, which are considered to need to be developed by the government compared to the western part of Indonesia. Provinces as research objects are Maluku, North Maluku, North Sulawesi, Central Sulawesi, and Gorontalo.

3.4 Population and Sample

According to the SPSS statistics book, the population is divided into two types, namely the limited population and the unlimited population. The population can be people, objects, and other sizes of objects that have the same characteristics or characteristics. The sample is a subset of the population utilized as research material. The expectation is that the sample is adequately representative of the population (Sekaran & Bougie, 2011). Thus, a sample can be known with or without a population.

Gay and Diehl (1992) mention that for descriptive research, the sample is 10% of the population; for correlational research, at least thirty elements of the population; for causal-comparative research, thirty elements per group; and for experimental research, fifteen elements per group. Subsequently, Roscoe (1975) in Sekaran & Bougie (2011) provides guidelines for determining the number of samples as follows:

- The sample size preferably is between thirty to five hundred.
- If the sample is further broken down into sub-samples, the minimum number of sub-samples must be thirty.
- The sample size in multivariate research (including multivariate regression analysis) must be ten times bigger than the number of variables observed. Therefore, the variables in this dissertation are six, implying that the appropriate sample size should be at least 60 respondents.
- For simple experimental research, with tight control, the sample size can be between ten and twenty

Thus, this research will use stratified purposive random sampling method with number of sample is 300 MSMEs represent from 10 cities and regions and to meet with the observed variable.

3.5 Operational Definition and Measurement of Latent Variables

3.5.1 Eco-agropreneurship

Eco-agropreneurship is entrepreneurship that refers to the ability to be entrepreneurial in agro-industry with activities that provide benefits and bear special attention to environmental sustainability and social impacts in rural areas. Eco-agropreneurship makes various efforts to maintain the environment as something that must be preserved as well as providing benefits to the community that can generate income for sustainable business. This concept is not measuring sustainability performance but how an entrepreneur can apply and adopt the agro-industry entrepreneurship activities to environmental protection and social impacts in rural areas. The

measurement of eco-agropreneurship is with 33 indicators of innovation of eco-preneurship and agropreneurship.

3.5.2 MSMEs Performance

Performance is a term that is frequently used to quantify the influence of a company's strategic orientation. This strategic approach takes into account both internal and external forces. The MSME's performance needs to deal with the problem and a challenge to gain sustainability. MSMEs performance can be measured through objective and subjective performance through perception.

3.5.3 Internal Factor

Internal factors include the fields of human resources, finance, production, marketing, product development, and others that provide an accurate picture of the company's state, show things that can be used to create strength, and remove obstacles to the company's progress. The dimension of internal factors as follows:

- **Education and Experience:** The term of education in this research is the year of formal education, while the experience is the time spent on the learning process to acquire and improve skills.
- **Working Hours:** This research term of working hours is the time to do work that can be carried out during the day and/or night. Planning future jobs is a step to improve time management. Working hour measurement is based on time spent by the owner/manager in doing business minus break time during work, and consistency in running the business.
- **Financial Aspect:** The ability of entrepreneurs to manage their financial elements includes using their own money, utilizing loan capital, capital accumulation, and dividing personal spending from company expenses. The indicators of this latent variable are the capital amount used for the business in production/operational, and the perception of an entrepreneur to manage the capital.
- **Marketing:** The definition of marketing in this research is divided into two categories, just like the financial aspect, which is from the amount of money spend for marketing and the owner/manager perception about their marketing management.
- **Production and Operational Aspect:** From an entrepreneurship perspective, the production process can be characterized as developing or adding a good or service utilizing production factors such as labor, machinery, raw materials, and cost. Labor

will be measure by a labor number used. The perception of the owner/manager to use the latest tool and amount of money spent to purchase the tools are the measurement of this laten variable. The percentage of the money will measure the raw material spend in production, including direct material, indirect material, and overhead.

3.5.4 External Factor

External factors are factors that can affect a company in determining the direction and actions that the company will take. External factors will affect the organizational structure and internal processes of the company. Positive external factors will help businesses to achieve goals. MSMEs analyze the factors that influence the business most by looking at opportunities in the external environment and making adjustments taking into account the circumstances and core competencies of the company to achieve goals. External factor indicators in this study are:

- **Government Assistance:** This Latent variable is to measure the facilities provided by the government in the form of training, infrastructure, and credit. Another is the government policy.
- **Customer:** This research will use customer satisfaction measurement based on the owner/manager perception. The indicators are indicators of product quality, cost, emotional, price, and service quality.
- **Competitor:** This Latent variable term is how far the owner/manager learns from the competitor. The indicators are imitating competitors' strategies and gathering information from customers.
- **Supplier:** This research will use the owner/manager perception to measure this Latent variable. The indicators are maintaining the relation and agreement.

3.5.5 Coastal Area Knowledge

The definition of local wisdom is exemplary cultural values that exist in a society. This variable means that to know local wisdom in an area, one must understand the good cultural values that exist in that area. The culture of mutual cooperation, mutual respect, such as (in the Indonesian language): *tepa selira*, *gotong royong*, *mapalus*, etc. are small examples of local wisdom. The meaning of local wisdom is the various values created, developed, and maintained by the local community, which become their life guidelines. These guidelines can be classified as social rules, either written or unwritten, and every community member will try to obey them. The measurement of this variable is as follows:

- **Local Knowledge.** Every community can adapt to its environment because the community has local knowledge of mastering nature. As well as public knowledge about climate change and several other natural phenomena
- **Local Skill.** Every society can survive to meet the needs of their respective kinship or called the economic substance. This skill is a way to maintain human life that depends on nature, from hunting, gathering, farming, and fishing.
- **Local Resource.** Each community will use local resources according to its needs and will not exploit them on a large scale or commercialize them. The community must balance the harmony of nature to avoid a dangerous impact on it.
- **Local Group Solidarity.** Humans are social creatures that need the help of others in doing their work because humans cannot live alone. Just like humans work together in protecting the surrounding environment.

3.5.6 Economics Awareness

Awareness of the economic situation due to COVID-19 and R-YouC is a variable to measure individual motivation to protect oneself depends on an assessment of threats called threat appraisal and strategies in dealing with threats or coping appraisal. In these situations, the desire to help others with awareness of the global economic situation can motivate entrepreneurs as an individual to prioritize environmental issues and care for others.

- Awareness to take care of own health
- Awareness to comply with safety control measurement
- Awareness to help others
- Keep trying to work more creatively and innovatively
- Information awareness:
 - Needs that are in shortage
 - Loan

All the variable measurement is about respondent opinion or perception using interval scale from 1 – 8, which smaller number represented the disagree and higher number to agree. The following is a table of research variables measurement:

Table 8. Research Variable and Measurement

Latent Variable	Manifest Variable	Items
Eco-agropreneurship (EAP) (See Attachment)	Ecopreneur and Innovation	
	Environmental protection	
	• Adopt changes towards pollution prevention	EAP1

• Ecopreneurship orientation,	EAP2
• Containment of waste	EAP3
• Use the raw material less polluted	EAP4
Energy Consumption	
• control level of energy efficiency	EAP5
• minimize production impact	EAP6
• control the water consumption	EAP7
• control emissions	EAP8
Eco-innovation	
• Innovative processes to reduce harm to the environment	EAP9
• Using latest information technology	EAP10
• Business environmental ethics	EAP11
Social Entrepreneurship	
• Making a social contribution, than the conventional solely money-driven approach	EAP12
• Applying good ethics, following responsible labor and procurement practices, and respecting human rights	EAP13
• Regularly participate (or will participate) in volunteer activities or community programs	EAP14
• Generating social and environmental gains for others in society	EAP15
• Job creation is your priorities for local society	EAP16
Recycling and Re-use	
Waste Management	
• Carry out recycling and material reuse actions on an ongoing basis	EAP17
• Re-use agriculture waste	EAP18
• Raw material waste management	EAP19
• Biogas management	EAP20
Machine re-condition	
• Renew machine production	EAP21
• Maintenance machine production	EAP22
Agropreneur and eco-innovation	
Environmental investment new agriculture technology	
• Invest in environmental science and agriculture technology	EAP23
• Green technology empowerment	EAP24
• Adopt new ecofriendly agriculture technology	EAP25
Consumer concern	
• improves business image	EAP26
• Improvement in product quality	EAP27
• Product National Standard	EAP28
Regulation concern	
• Response of economic pressure	EAP29

	• Environmental Certifications are very important to adopt ecologic strategies	EAP30	
	• Aware of Government Sustainable program	EAP31	
	Management Aspect		
	• Creative Management	EAP32	
	• Innovative Management	EAP33	
MSMEs Performance (BP) (Bahri et al., 2017; Eniola & Entebang, 2015; Fernández-Olmos & Ramírez-Alesón, 2017; Fithriyana & Fahmy, 2022; Kalkhouran et al., 2015; Karadag, 2016; Ruslianti & Mulyaningrum, 2020; Tumiwa et al., 2020; Tumiwa & Nagy, 2021)	Financial Dimension		
	Perception on increasing in sales revenue	BP1	
	Perception on ability to generate profit (profitability)	BP2	
	Non-financial Dimension		
	Perception on increase in market share	BP3	
	Perception on increase in employee/self working quality	BP4	
	Perception on increase in environmental protection	BP5	
	Internal Factor (IF)	Aspect of Human Resources	
		• Education and Experience	IF1
		• Working hours	IF2
	Financial Capital Source	IF3	
	Competitive pricing strategy	IF4	
	Perception about marketing management	IF5	
	Sufficient production capacity	IF6	
	Strategic location	IF7	
External Factor (EF) (Fernández-Olmos & Ramírez-Alesón, 2017; M. Han & Wang, 2015; Menguc et al., 2010; Piowar-Sulej et al., 2021; Sari & Hasnelly, 2012; Tumiwa et al., 2020; Udiyana et al., 2018)	Supporting facility by Government	EF1	
	Government policy	EF2	
	Customer satisfaction	EF3	
	Learning strategy and information from competitors	EF4	
	Good supplier	EF5	
Coastal Area Knowledge (CA) (Akhter & Sultana, 2018; Kurniawati et al., 2020; Touwe, 2020; Winarno et al., 2019)	Local knowledge	CA1	
	Ability of local skill	CA2	
	Information local resources	CA3	
	Local group solidarity	CA4	
Economics Awareness (EA) (Adwani, 2022; Alam et al., 2022; Guiliani et al.,	Care about own health	EA1	
	Keep trying to work more creatively and innovatively	EA2	
	Awareness to help others	EA3	

2021; L. Lu et al., 2021; Y. Lu et al., 2020; B. R. Purnomo et al., 2021)	Comply with safety control measurement by government	EA4
	Information regarding current market needs	EA5
	Information regarding of loan and credits	EA6

Sources: Author archive data processing, 2022

3.6 Data Analysis

The analytical tools used in this dissertation are divided into several sections based on the research approach.

3.6.1 Systematic Literature Review

This dissertation used a systematic literature review (SLR) technique to achieve reproducible and valid results for analyzing and interpreting all available published research papers on a specific subject or topic of interest. The SLR process begins by defining its conceptual limits, which are captured to describe the variable eco-agropreneurship and the elements that influence it.

Systematic reviews are beneficial in synthesizing various relevant research results. The resulting facts become more comprehensive and balanced. This dissertation uses Meta-Synthesis as a Systematic Review of Qualitative Methods with a Meta-ethnographic approach. Meta-ethnography is a so-called “interpretive” approach to individual research findings. Due to the interpretive approach, the analysis technique is iterative (spiral). The findings of individual research results that have been carried out will be reviewed for meaning (re-interpretation) that will later produce new knowledge or concepts that are sourced from research questions (review questions) by summarizing various research results (Brisset et al., 2013; Campbell et al., 2011).

In filtering articles, this dissertation uses two main keywords combination, which is ecopreneurship and agropreneurship. All articles should be written in English. Furthermore, all archives should contain research on eco-innovation or green entrepreneurs, reflected in the title and abstract, and should be issued in peer-reviewed journal articles to ensure rigor and obtain quality literature examined as TAA (Title Abstract Alignment) search method proposed by Tumiwa et al. (2022).

3.6.2 Factoring Reduction Analysis

The factoring analysis used in this dissertation is Principal Component Analysis. This study seeks to discover the link between some manifest variables that can be reduced to fewer than the number of origin manifest variables (Corazza, 2017; Jolliffe, 2005; Karamizadeh et al., 2013).

There are several assumptions that must be met in factoring analysis as follows:

- Correlation between independent variables. The magnitude of the correlation or correlation between independent variables must be strong enough above 0.5.
- Partial Correlation. The magnitude of the partial correlation, the correlation between two variables by assuming the other variables remain, should be small. In SPSS, the detection of partial correlation is given through the Anti-Image Correlation option.
- Testing the entire correlation matrix (correlation between variables), as measured by the Bartlett Test of Sphericity or Measure Sampling Adequacy (MSA). This test requires a significant correlation between several variables and the sig. value should be below 0.05
- The index of the comparison of the distance between the coefficients and their partial correlation coefficients as a whole must be small. This can be identified by the Kaiser-Meyer-Olkin (KMO) value. KMO is an index of the comparison of the distance between the coefficients and their partial correlation coefficients as a whole. The KMO value must be bigger than 0.5.

SPSS displays various significant tables and outputs relevant to factoring analysis. The most significant thing is the Rotated Component Matrix output. This output ensures the variable included is based on the factor model's highest correlation value.

3.6.3 Descriptive Analysis

This dissertation uses descriptive analysis to analyze the empirical study of the information received and also offer an overview/description of the respondents' data collected. The data is derived from the responses of the respondents based on the questionnaire items. Additionally, the data interpretation process includes data categorizing and tabulating. The descriptive analysis in this dissertation analyzes the gender, age, education, business age, kind of business, number of workers, and religion distribution. Another descriptive analysis is for the research variable to analyze the loading factor or lambda value that should be more than 0.7 for the threshold value (Nagy et al., 2022).

3.6.4 Structural Equation Modeling

This dissertation's data analysis used the Partial Least Square (PLS) approach to test the confirmatory model. PLS was first developed by Herman O. A. Wold in (1963). An essential advantage of PLS is that it can handle many independent variables, even if there is multicollinearity among the independent variables. PLS is an alternative predictive technique to Ordinary Least Square (OLS) regression, canonical correlation, or Structural

Equation Modeling (SEM). Hair (2019) stated that PLS is a variant-based SEM statistical method designed to solve regression model such as small research sample sizes, missing data, and multicollinearity. PLS is a Structural Equation Modeling component or variant-based method (SEM). Ringle et al. (2015) defines PLS as an alternate technique that changes from a covariance-based SEM approach to a variant-based approach. PLS is a robust analytical tool that does not require many assumptions, such as that data be normally distributed, that a large sample size is required, and that indicators with categorical, ordinal, interval or ratio data scales can be employed.

PLS relates the features of Principal Component Analysis (PCA) and model regression. The procedure for using PLS is carried out in two stages. First, by setting latent variables that explain as many possible covariances between the independent and dependent variables. Second, predict the value of the dependent variable by using the independent variable decomposition.

Besides being able to be used to confirm a theory, PLS also might be used to analyze the relationship between latent variable, that can simultaneously analyze the constructs with reflective and formative indicators. The definition of reflective and formative indicator models in PLS-SEM shows two relationships between indicators or manifest and latent variables: the reflective and the formative models (Hair et al., 2020; Sarstedt et al., 2016). The reflective model reflects that each indicator measures the error imposed on the latent variable. The direction of cause effect is from latent variables to indicators - indicators are reflections and variations of latent variables. Thus, changes in latent variables will cause changes in all indicators. Changes in the construct will cause changes in the indicators because the indicators are the embodiment or reflection of the construct. The formative Indicator Model occurs if a latent variable is defined as a combination of indicators. Thus, changes that occur from indicators are reflected in changes in latent variables. The formative construct has the characteristic that a change in the indicator will cause a change in the construct that the indicators become the cause to form the constructs.

Evaluation of Goodness of Fit.

Although there is debate about the difficulty of determining the appropriate causal-predictive model (W. Chin et al., 2020), PLS-SEM based on Henseler & Sarstedt (2013) and Tenenhaus et al. (2000) is well suited for emerging market research, such as Indonesia, because it does not require large sample sizes or normalized data (Handayati et al., 2020; S. Purnama et al., 2021; Sukendro et al., 2020). Thus, this research uses Henseler & Sarstedt

(2013) as the primary guideline. The goodness of fit evaluation is divided into two, which are the outer model and the inner model.

3.6.4.1 Outer Model

The outer model is divided into two, formative and reflective. In this dissertation, the indicators used are reflective. The formula to determine the other model as follow:

$$x = \lambda_x \xi + \delta_x \dots (1)$$

$$y = \lambda_y \eta + \varepsilon_y \dots (2)$$

Source: (Sarstedt et al., 2017)

Where:

x	:	Manifest variables related to exogenous variables
y	:	Manifest variables related to endogenous variables
λ (lambda)	:	Factor loading, which is a direct relationship parameter of exogenous variables with their manifest variables
ξ (ksi)	:	Exogenous variable notation
η (eta)	:	Endogenous variable notation
δ (delta)	:	Measurement error for exogenous
ε (epsilon)	:	Measurement error for endogenous
(1)	:	Equation for exogenous variable
(2)	:	Equation for endogenous variable

The outer model with reflexive indicators is evaluated with convergent and discriminant validity of the indicators and composite reliability for the indicator block.

3.6.4.1.1 Convergent Validity Test

Testing the validity of reflective indicators can be done by using the correlation between indicator scores and construct scores. Measurement with reflective indicators shows a change in an indicator in a construct if other indicators in the same construct change. Convergent validity is assessed based on the correlation between the item score and the construct score calculated by PLS. The reflective measurement is considered high if they correlate more than 0.7 with the construct to be measured. However, for research in the early stages of developing a measurement scale, a loading value of 0.5 to 0.6 is considered sufficient (F. Hair Jr et al., 2014; Sarstedt et al., 2017).

3.6.4.1.2 Discriminant validity

This validity relates to the principle that different construct metrics should not correlate with height. Discriminant validity occurred when two different instruments measuring two predicted uncorrelated constructs produced scores that are indeed uncorrelated. The discriminant validity test was assessed based on the cross-loading measurement with the construct. Another method to assess discriminant validity is to compare the AVE root for each construct correlation to other constructs in the model. The model has sufficient discriminant validity if the AVE root for each construct is greater than the correlation between the constructs and other constructs in the model (F. Hair Jr et al., 2014; Sarstedt et al., 2017). The AVE formula as follows:

$$p_i = \frac{\sum \lambda_i^2}{\sum \lambda_i^2 + \sum_i \text{var } \varepsilon_{(i)}} \dots\dots (3) \text{ (Fornell \& Larcker, 1981)}$$

Where:

- p_i : AVE
- $\text{var } \varepsilon_{(i)}$: $1 - \lambda_i^2$
- λ_i : Loading factor (convergent validity)

This dissertation uses Fornell-Larcker Criterion and Cross Loading as a discriminant validity measurement.

3.6.4.1.3 Reliability Test

In addition to the validity test, PLS also performs a reliability test to measure the internal consistency of the measuring instrument. Composite reliability (ρ_c) measures the absolute value of the reliability of a construct. The ρ_c formula as follows:

$$\rho_c = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + \sum_i \text{var } \varepsilon_{(i)}} \dots\dots (4) \text{ (Fornell \& Larcker, 1981)}$$

Where:

- $\text{var } \varepsilon_{(i)}$: $1 - \lambda_i^2$
- λ_i : Loading factor (convergent validity)

The rule of thumb for composite reliability must be greater than 0.7, although a value of 0.6 is still acceptable (Hair et al., 2020).

3.6.4.2 Inner Model

The inner or structural model describes the causal relationship between latent variables built based on the substance of the theory. The PLS algorithm is limited to the estimated

coefficient values. Meanwhile, to test the significance or probability must be done through bootstrapping analysis. Subsequently, the inner model is a structural model to predict causality between latent variables. The formula of the inner model as follows:

$$\eta = \beta_0 + \beta_\eta + \gamma\xi + \zeta$$

Because PLS is built for a recursive model, there is a relationship between latent variables in the form of an equation called the causal chain system. The mediation/intervention model is conceptually similar to recursive model analysis. The only difference is the statistical meaning of the mediation effect. The causal chain systems equation as follows:

$$\eta_j = \sum \beta_{ji} \eta_i + \sum \gamma_{ji} \xi_b + \zeta_j \dots \dots (5)$$

Sources: Modified equation formula by Wold (1963) and Chin (1998)

Where:

- $i .. b$: Index range along i and b
- j : Number of endogen variable
- β_{ji} : Path coefficient between a latent endogen and another latent endogen.
- γ_{ji} : Path coefficient between a latent endogen and latent exogen.
- ζ (Zeta) : Structural error

T-statistic test parameters are obtained to predict the existence of a causal relationship through the bootstrapping process. Another important analysis regarding the inner model is about direct, indirect, and total effects. Subsequently, to test the goodness of fit of the model, this dissertation measure the inner model by calculating coefficient determination R^2 , effect size F^2 , predictive relevance Q^2

3.6.4.2.1 Inner Model Assumptions

The assumption or requirement in the inner model analysis is that there is no multicollinearity problem where there is a strong intercorrelation between latent variables using Variance Inflation Factor (VIF) to evaluate collinearity or there is no strong correlation (> 0.9 or < -0.9) between latent variables (Al-Baghdadi et al., 2021; Hair et al., 2013, 2019; Sahaym et al., 2021).

3.6.4.2.2 Direct, Indirect, And Total Effects

Direct effects are the direct influence of a construct or exogenous latent variable on endogenous latent variables. Indirect effects are the indirect influence of a construct or exogenous latent variable on endogenous latent variables through an endogenous

intermediate variable. The total effect is the total direct effect plus the indirect effect (Hair et al., 2021; Sarstedt et al., 2017).

3.6.4.2.3 Coefficient Determination R²

According to Hair et al. (2013) and (2019), the value of R² depends on the research.

The equation of R² as follows:

$$R^2 = \frac{SSR}{SST} \dots\dots (6)$$

Where:

- SSR : The square of the difference between the predicted variable values and the average value $Y = \sum(Y_{pred} - Y_{average})$
- SST : The square of the difference between the predicted variable values and the average value $Y = \sum(Y_{actual} - Y_{average})$

There is a threshold value as an acceptable minimum level of 0.10. Furthermore, this research uses the category description of the R² by Hair et al. (2011) Henseler et al. (2009) as follows:

- R² value of 0.75 is categorized as substantial
- R² value of 0.5 is categorized as moderate
- R² value of 0.25 is categorized as weak

However, according to Chin (1998), if the R² value above 0.6 is categorizes as strong

3.6.4.2.4 Effect Size F²

Changes in the value of R² can be used to see whether the effect of the exogenous latent variable on the endogenous latent variable has a substantive effect on the structural level.

This can be measured by the effect size F². The formula of F² as follows:

$$f^2 = \frac{R_{included}^2 - R_{excluded}^2}{1 - R_{included}^2} \dots\dots (7)$$

Source: Chin (1998) and Henseler et al. (2009)

According to Chin (1998) and Henseler et al. (2009) the criteria Effect Size F² as follows:

- 0.02, small effects
- 0.15, moderate effects
- 0.35, large effects

3.6.4.2.5 Predictive Relevance Q² Effect Size (q²)

Another test in structural measurement is Q² predictive relevance, which validates the model. This measurement is suitable if the latent endogenous variable has a reflective measurement model. The Q² effect size has a value with a range of $0 < Q^2 < 1$, where the closer to 1, the better the model. The quantity of Q² effect size is equivalent to the coefficient

of total determination in path analysis. If the value of Q^2 effect size > 0 , it has a good observation value, whereas if the value of Q^2 effect size < 0 , it means that the observed value is not good. Q^2 predictive relevance value for structural models, measuring how well conservation values are generated by the model and also the estimated parameters. Q^2 value > 0 indicates the model has predictive relevance; On the other hand, if the value of Q^2 is 0 indicates that the model lacks predictive relevance. SmartPLS software offer the calculation using sum square prediction error (SSE) and Sum of Squares of Observations (SSO). Predictive relevance value is obtained by the formula (Hair et al., 2019, 2020):

$$Q^2 = 1 - (1 - R^{12}) (1 - R^{22}) \dots (1 - R^{n2}) \dots (8)$$

Source: Chin (1998) and Henseler et al. (2009)

PLS-SEM calculates the value of Q^2 from the results of the blindfolding in the cross-validated redundancy construct section. Furthermore, the value of q^2 effect size is used to determine the relative effect of the structural model on the measurement of the latent dependent variable observations. The purpose of calculating the q^2 effect size is to determine the effect size if one of the latent variables is excluded from the research model. q^2 value is measured by Q^2 included and Q^2 excluded. The value of Q^2 predictive relevance included can be seen from the dependent variable Q^2 , while Q^2 predictive relevance excluded is the Q^2 value of the dependent variable when the latent variable is removed from the model. The value of q^2 calculated by the formula as follow:

$$q^2 = \frac{Q^2 \text{ predictive relevance included} - Q^2 \text{ predictive relevance excluded}}{1 - Q^2 \text{ predictive relevance included}} \dots (9)$$

Source: Chin (1998) and Henseler et al. (2009)

The q^2 assessment criteria consist of three categories as follow:

- 0.02 = weak influence,
- 0.15 = moderate influence,
- 0.35 = large influence.

3.6.4.3 GoF Square Root Formula

Next is the calculation of the model's Goodness of Fit, abbreviated as GoF. There is no exact goodness of fit model measurement in PLS-SEM since PLS-SEM is different from covariance-based structural equation modeling (CB-SEM) (Sarstedt et al., 2016). According to the Smart PLS website, some researchers offer a set of fit measures (Ringle et al., 2015). However, some fit measures imply restrictive assumptions on the residual covariances, which PLS-SEM does not imply when estimating the model. They added that the outer residuals of composite models are not required to be uncorrelated. Hence, the model fit

estimating calculation/GoF are inappropriate for PLS-SEM. However, according to the SmartPLS website, the GoF cannot reliably distinguish valid from invalid models, and since its applicability is limited to specific model setups, researchers should avoid its use as a goodness of fit measure because the model fit is only useful for a PLS multigroup analysis (PLS-MGA) (Ringle et al., 2015). Therefore, this research suggests a more explicit calculation of GoF by using the Global Fit PLS path model guideline, introduced by Henseler & Sarstedt (2013):

$$GoF = \sqrt{com. \times \overline{R^2}} \dots \dots (10)$$

GoF values range from 0 to 1 with the interpretation of values:

- 0.1 (small GoF)
- 0.25 (moderate GoF)
- 0.36 (large GoF)

3.6.4.4 Hypothesis Testing

The research hypothesis was analyzed using PLS bootstrapping technique. The goodness of fit is a measure of the feasibility of a model. The model that is considered feasible will be tested using bootstrapping. The bootstrapping analysis shows the t-statistic value of each path or hypothesis. Bootstrapping will display the results of other calculations such as p-value.

4. RESEARCH FINDINGS AND THEIR EVALUATION

4.1. Systematic Literature Review

This method is used to prevent the author's subjective assessment based on the authors' previous research work experience, which can make the results of this dissertation biased. This dissertation uses Meta-Synthesis as a systematic review of qualitative methods with a Meta-ethnographic approach. There are several keywords and search syntax to bridge the main keywords combination. Each database has its search syntax characteristics. In general, the search syntax used was as follows:

Table 9. Filtering Process

Filtering Criteria	Scopus		WoS	
	Agropreneur	Ecopreneur	Agropreneur	Ecopreneur
Keywords Search (Title, Abstract, Keyword) Include: Agropreneur (Agriculture, entrepreneurship) and Ecopreneur Exclude: Others term	967	94	6,140	313
Subject Area and Categories Include: Economics, Business, Management, and Accounting Exclude: others categories	627	62	1,213	39
Document type Include: Article Exclude: Book chapter, conference paper, and book	481	41	723	26
Total	1,271 Articles			

Sources: Data Articles Process, 2022

From table 9, it can be seen that the number of articles acquired is 1,271 articles. The term of Eco-agropreneurship is does not exist in any databases. This term is the combination of two term, ecopreneurship and agropreneurship. The term of Agropreneurship is even rare, only 4 articles that describe and use the word agropreneur. Thus, to define the agropreneurship, this dissertation combined the term agriculture and entrepreneurship. However, from the 1,271 articles, only discuss the efforts of entrepreneurs in rural areas, especially in the agriculture sector. Thus, the concept of environmental preservation is still not widely discussed. Furthermore, this dissertation uses the TAA technique to clarify the

search for articles related to the concept of eco-agropreneurship (Tumiwa et al., 2022). This TAA concept is an answer to the argument about the lack of data accuracy in several leading databases, such as Scopus and the Web of Science (Nees & Waltman, 2019; Perianes-Rodriguez et al., 2016). The TAA process begins by downloading the search results in .ris, .bib, etc., formats. Then, this text data was analyzed using excel and No-Code Text Analytics by MongkeyLearn. Furthermore, the data is re-filtered using several keywords and a search combination syntax. The search process can be seen in table 10.

Table 10. TAA Filtering

Keywords	Scopus	WoS
Ecopreneur	29 Documents	10 Documents
Green Entrepreneur and Eco-Innovation	19 Documents (TAA number 1 – 3)	22 Documents
Social Entrepreneur and Eco-Innovation	19 Documents (TAA number 1, 4, and 5)	20 Documents (TAA number 4, 4, and 5)
Environmental Entrepreneur and Eco-Innovation	29 Documents (TAA number 5, 6)	31 Documents (TAA number 8)
Agropreneur	4 Documents (TAA number 7)	5 Documents (TAA number 9,10, and 11)
Total (after eliminating duplicated articles)		96 Documents

Sources: Author data process, 2022

This study summarizes all 96 articles related to the term of Eco-agropreneurship to ensure that nothing is missed such as definitions, variables and approaches used, related research results, and suggestions for further research. There are several documents are excluded from the analysis because did not match with the key words search, syntax, and filtering criteria. Subsequently, there are 11 articles excluded based on the TAA filtering method. Those articles are listed on the TAA Appendix.

The following is a description of the analysis of the search results:

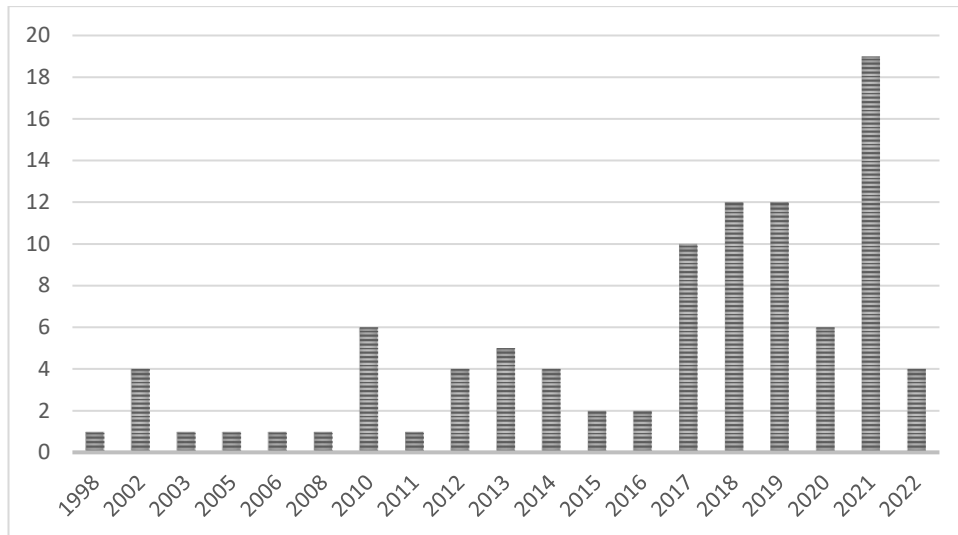


Figure 3. Documents Frequency Based on Year

Source: Author archives data analysis by excel, 2022

Figure 3 shows the development of ecopreneurs and eco-innovation that has increased in 2010, 2012, and 2017—this is increasing in the literature due to the global crisis. At the beginning of 2008, the world was shocked by the financial crisis by the domino effect of Lehman Brothers' collapse. The domino effect due to the financial crisis also affected various countries, such as the Greek debt crisis and several countries in Europe (Alraja et al., 2022; Gliedt et al., 2018; Á. Triguero et al., 2017). With this crisis, entrepreneurs more concerned with technology with environmentally friendly production emerged (Boutillier, 2019; Vlasov et al., 2021). Thus, many studies on the concept of entrepreneurship in the midst of the economic crisis began to appear.

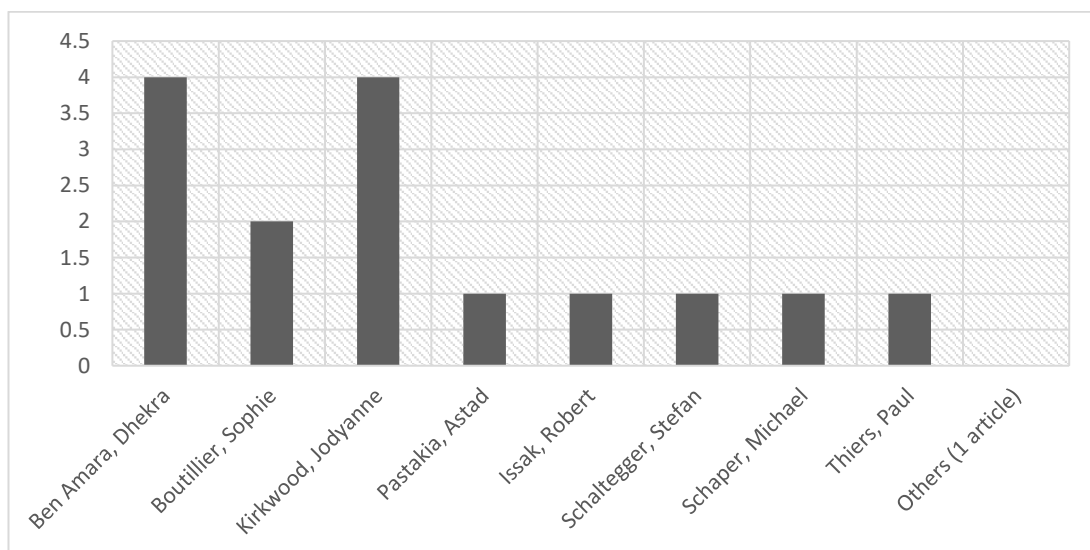


Figure 4. Documents Frequency by Author

Source: Author archives data analysis by excel, 2022

The figure 4 shows the number of articles based on the first author's name. Based on the figure 4, Dhekra Ben Amara is the first author with the most articles based on the number of articles published. Ben Amara wrote two articles on entrepreneurship and eco-innovation with Hong Chen and Muhammad Hafeez in (2019) and (2020). Then Ben Amara and Hong Chen continued their research in (2021) and (2022). Another first author with 4 articles is Jodyanne Kirkwood with Sara Walton started their research in 2010 (Kirkwood & Walton, 2010a, 2010b). Nevertheless, if sorted by year of observation, the first author is Astad Pastakia in (1998) with the article title: Grassroots ecopreneurs: Change agents for a sustainable society. Furthermore, in 2002 many other writers appear in other different articles, such as Robert Isaak, Stefan Schaltegger, Michael Schaper, and Paul Thiers (Isaak, 2002; Schaltegger, 2002; Schaper, 2002; Thiers, 2002). Another exciting thing about this description analysis, when compared to the documents counts for up to 15 countries or territories, it is found that Indonesia has the largest number of articles indexed on the Scopus databases with 12 articles about ecopreneurship. This result is shown in Figure 5:

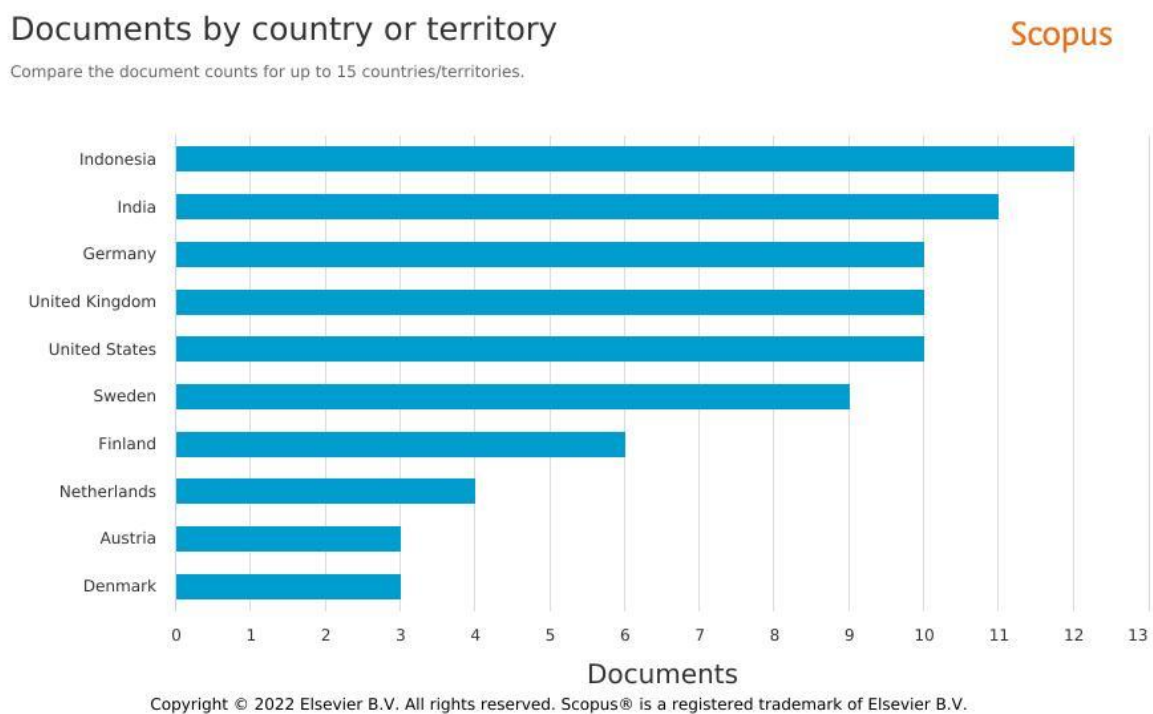


Figure 5. Documents by Countries

Thus, it is undeniable that ecopreneur is an interesting and significant topic in Indonesia, considering that there are many failures in preserving the environment, and it is crucial to find a solution immediately (MacAndrews, 1994; Manullang et al., 2021). There is much debate about the importance of the ecopreneur concept and its impact on business (Ferrari

et al., 2010; Palmås & Lindberg, 2013; Santini, 2017). For this reason, proper modeling analysis is needed and must begin with the rigor of previous research.

Furthermore, based on the coding and analysis of the data collected to define and create indicators of research variables, following the order of the aggregate themes in the coding structure, this dissertation finds the aggregate dimensions as follows:

Table 11. Data Structure and Coding Process

First order category	Second-order theme	Aggregate Dimension	
Market aspect	Internal	The drivers	
Skill improvement	(Baran, 2021; Ben Amara et al., 2019; Hansen et al., 2012; Isaak, 2002; Kearins & Collins, 2012; Kushwaha & Sharma, 2017; Manullang et al., 2021; Mikhno et al., 2021; Putri et al., 2019; Reitano et al., 2014; Sarkar, 2013; Thiers, 2002; Udiyana et al., 2018)		
Organizational learning capability			
Production factor			
Working hours			
Financial Motivation			
Education			
Experience			
Corporate social responsibility or CSR,			External
Technology	(Ben Amara et al., 2020; Ben Amara & Chen, 2022; Fichter & Tiemann, 2018;		
Corporate environmental ethics,	Piwowar-Sulej et al., 2021; Á. Triguero et al., 2017; Udiyana et al., 2018)		
Satisfaction and Information:			
Customer, Supplier and Competitor			
Policy			
Rural Government			
Management accounting system			
Profitability	Financial:		
	(Hoogendoorn et al., 2019; Kirkwood & Walton,		

Sales revenue	2010b; Manesh & Rialp-Criado, 2019; Tantayanubutr & Panjakajornsak, 2017)	
Marketing performance	Non - Financial:	
Production performance	(Alraja et al., 2022; Ben Amara & Chen, 2021; Corazza et al., 2022; El Harbi et al., 2011; Fitria & Yuliana, 2018; Peralta et al., 2019; Tantayanubutr & Panjakajornsak, 2017; Zhao et al., 2020)	
Market share		
Eco-organization in terms of eco-campus for university youth entrepreneurs		
Reputation and social legitimization		
Environmental performance		
Competitive advantage		
Adopt changes towards pollution prevention	Environmental protection	Ecopreneurship and innovation
Ecopreneurship orientation,	(Ball & Kittler, 2019; Baran, 2021; Božić & Botrić, 2017; Burzyńska et al., 2018; Dodd et al., 2018)	(Ball & Kittler, 2019; Baran, 2021; Ben Amara et al., 2019; Ben Amara & Chen, 2021, 2022; Boutillier, 2019; Božić & Botrić, 2017; Burzyńska et al., 2018; Corazza et al., 2022; Crecente et al., 2021; Dodd et al., 2018; Fitria & Yuliana, 2018; Gallis, 2010; X. Li & Liu, 2018; Marin et al., 2015; Ociepa-Kubicka & Pachura, 2017; Peralta et al., 2019; Reitano et al., 2014; Rena et al., 2022; Roomi et al., 2021; Sáez-Martínez et al., 2014; Sarkar, 2013; Á. Triguero et al., 2017; Yang et al., 2021)
Containment of waste		
Use the raw material less polluted		
Innovative processes to reduce harm to the environment	Eco-Innovation	
Using new technologies not harmful to the environment	(Affolderbach & Krueger, 2017; Alraja et al., 2022; Beveridge & Guy, 2005; X. Li & Liu, 2018; Manullang et al., 2021; Mikhno et al., 2021; Panackal et al., 2016; Randjelovic et al., 2003; A. Triguero et al., 2013)	
Corporate environmental ethics		
Control level of energy efficiency	Energy Consumption	

Minimize production impact	(Ball & Kittler, 2019; Ben Amara & Chen, 2022; Dodd et al., 2018; Dorathy, 2017; Manesh & Rialp-Criado, 2019; Rena et al., 2022; Veleva & Bodkin, 2018)	
Control the water consumption		
Control emissions		
Making a social contribution, than the conventional solely money-driven approach	Social Entrepreneurship (Boutillier, 2019; Palmås & Lindberg, 2013; Sonne, 2012; F. Wang & He, 2019; Yusoff et al., 2019)	
Applying good ethics, following responsible labor and procurement practices, and respecting human rights		
Regularly participate (or will participate) in volunteer activities or community programs		
Generating social and environmental gains for others in society		
Job creation is your priorities for local society		
Carry out recycling and material reuse actions on an ongoing basis	Waste Management (Fichter & Tiemann, 2018; Manullang et al., 2021; Mikhno et al., 2021; Refsgaard et al., 2021; Vatansever & Arun, 2016; Veleva & Bodkin, 2018)	Recycling and Re-use
Re-use agriculture waste		
Raw material waste management		
Biogas management		
Renew machine production	Machine re-condition	

Maintenance machine production	(Božić & Botrić, 2017; Putri et al., 2019; Ra et al., 2019)	
Invest in environmental science and agriculture technology	Enviornmental invesment new agriculture technology (Musa et al., 2021; Ra et al., 2019; Sarkar, 2013; Thiers, 2002)	Agropreneurship and innovation
Green technology empowerment		
Adopt new ecofriendly agriculture technology		
Improves business image	Product quality concern	
Improvement in product quality	(Božić & Botrić, 2017; Hoogendoorn et al., 2020; Ociepa-Kubicka & Pachura, 2017;	
Product National Standard	Papadopoulos et al., 2014; A. Triguero et al., 2013)	
Response of economic pressure	Regulation concern (Božić & Botrić, 2017; Hoogendoorn et al., 2020;	
Environmental Certifications are very important to adopt ecologic strategies	Strydom et al., 2021; A. Triguero et al., 2013; Veleva & Bodkin, 2018; Yang et al., 2021)	
Aware of Government Sustainable program		
Creative Management	Management Aspect	
Innovative Management	(Ben Amara et al., 2019; Boutillier, 2020; Božić & Botrić, 2017)	

Sources: Author archives data processing, 2022.

Table 11 describes the dimensions of eco-agropreneurship measurement that can be adapted to the research object. The table 11 also provides input and direction in explaining the eco-agropreneurhsip variable and how to measure it.

The research of Ecopreneurship stems from ‘ecology movement’ research by Quinn (1971) published by Harvard Business Review. Another pioneer of the environmental research related to the business is purposed by Elkington & Burke (1989). However, according to the

Scopus and WoS databases, the first archive of the term Ecopreneur with eco-innovation was first discussed by Pastakia (1998). He classified the Ecopreneur into two main groups, which are social and commercial. However, these groups belong to the larger family business. In 2002, Thiers proposed studying market strategy related to policymaking in specific geographical locations (Thiers, 2002)

The end of the MDGs in 2015, followed by the Sustainable Development Goals (SDGs) is a new challenge for all parties to carry out development in principle to meet the current requirements without harming the future generations' necessities (Cabot et al., 2019). In line with sustainable development, the use of natural resources must consider the balance of profit, social, and ecology (Affolderbach & Krueger, 2017; Mikhno et al., 2021; Vlasov et al., 2021). The limitations of natural resources need to be addressed by taking into account ecological sustainability (Kushwaha & Sharma, 2017; Panackal et al., 2016). Furthermore, this movement initiated a change of mindset from the traditional model-based towards the green business or green start-up (Ball & Kittler, 2019; Fitria & Yuliana, 2018; Isaak, 2002; Kirkwood & Walton, 2010b; Kushwaha & Sharma, 2017; Oncioiu et al., 2015; Rodgers, 2010; Šebestová & Sroka, 2020; Vatansever & Arun, 2016). This sustainability approach must be applied to various business lines, including eco-friendly farming-based agricultural businesses. Isaak (2002) argues that eco-entrepreneur is essential for humans and the next generation no matter where we are located globally, and it should start from the beginning of forming the business or at the start-up business level. In the same year, Schaper (2002) found the schemes for SMEs to provide start-up and growth capital for green enterprises. In the following year, the issue of green start-up business caught the attention of the financial sector, such as green venture capital (green VC) (Isaak, 2002; Randjelovic et al., 2003).

The term eco-agropreneurship is from the term eco entrepreneurship, also called ecological entrepreneurship and sustainable entrepreneurship. McEwen (2013) in Panackal et al. (2016); Renfors (2019); and Dash & Kumar (2021) states that sustainable entrepreneurship is a business model that integrates economic, social, and environmental. According to Isaak (2002) and Walley and Taylor (2002), eco-entrepreneurs found new businesses based on the principle of sustainability (Beveridge & Guy, 2005; El Harbi et al., 2011; Kearins & Collins, 2012; Manesh & Rialp-Criado, 2019; Reitano et al., 2014; Renfors, 2019; Santini, 2017; Schaper, 2002; Setyawati et al., 2018). This business principles are explained in various ways, such as ethical entrepreneurship Taylor and Walley (2002) or enviropreneurship (Kirkwood & Walton, 2014; Vatansever & Arun, 2016). Entrepreneurial motivation with a commitment to sustainability is based on the spirit of green value

(Kirkwood et al., 2017; Kirkwood & Walton, 2010b, 2010a), environmental awareness (Fitria & Yuliana, 2018; Papadopoulos et al., 2014; Rena et al., 2022; Rui & Lu, 2021; Sáez-Martínez et al., 2014), environmental responsibility (Corazza et al., 2022; Peralta et al., 2019; Rabadán & Sáez-Martínez, 2017; Rodgers, 2010; Udiyana et al., 2018), or as a competitive advantage (Burzyńska et al., 2018; Oncioiu et al., 2015; Papadopoulos et al., 2014) and environmental preservation (Kummitha, 2021; Pastakia, 1998; Schaper, 2002). Thus, the creative process will change conventional production methods into a dynamic approach following environmental changes (Affolderbach & Krueger, 2017; Gibbs, 2006; Leroux & Pupion, 2018; Manullang et al., 2021; Oncioiu et al., 2015; Schaltegger, 2002). Furthermore, this concept has a lot of development and discussion. However, the development of this concept has slightly deviated from the original meaning of "green". The definition has discussed about the creation of a widely accepted definition and thereby undermines its primary definition of preserving the environment. Lanfranchi (2010) and Randjelovic et al. (2003) defines green entrepreneurship as a system that transforms socially and environmentally engaged businesses through significant innovation. On the other hand, Dean and McMullen (2007) describe it as a process of defining and discovering economic possibilities to correct ecological failures done by business operations (Ball & Kittler, 2019). Some several researchers thinks of green entrepreneurship as eco entrepreneurship to create value across innovations and ecological products (Indaco-Patters et al., 2013; Manesh & Rialp-Criado, 2019; Santini, 2017; Schaltegger, 2002; Vatansever & Arun, 2016). In addition, in his opinion, the motivation must be market-oriented and express the motivation of entrepreneurs to keep environmentally friendly (Fithriyana & Fahmy, 2022). This concept is in line with the eco-agropreneurship driver.

The drivers of eco-agropreneurship are mainly influenced by internal rather than external drivers (Cherrier et al., 2012; Piwowar-Sulej et al., 2021; Vatansever & Arun, 2016). Internal factors include the fields of human resources, finance, production, marketing, product development, and others that provide an accurate sight of the company's state, show things that can be used to create strength, and remove obstacles to the company's progress (Baran, 2021; Ben Amara et al., 2019; Ben Amara & Chen, 2022; Fichter & Tiemann, 2018; Hansen et al., 2012; Isaak, 2002; Kearins & Collins, 2012; Kushwaha & Sharma, 2017; Manullang et al., 2021; Mikhno et al., 2021; Putri et al., 2019; Reitano et al., 2014; Sarkar, 2013; Thiers, 2002; Udiyana et al., 2018). The business can use positive internal factors to achieve its mission, goals, and objectives. On the contrary, the business must avoid negative internal factors because they will hinder the company in achieving its goals, for example,

lack of capital, shortage of skilled workers, inability to master technology, lack of education/experience, and non-strategic locations. Subsequently, positive external factors will help the company achieve its goals. The company analyzes the factors that have the most influence on the company by looking at opportunities in the external factor and making adjustments taking into account the circumstances and core competencies of the company to achieve goals (Ben Amara et al., 2020; Fichter & Tiemann, 2018; Piwowar-Sulej et al., 2021; Á. Triguero et al., 2017; Udiyana et al., 2018).

Furthermore, continue with the green term, Schaper (Schaper, 2002) who known for his in-depth research in the field of business ecology, summarizes various aspects to form an overall concept for ecological entrepreneurship. According to Burzyńska et al. (2018), ecological entrepreneurship or green entrepreneurship are businesses that produce environmentally friendly products to reduce their spending and sustainably use natural resources by adopting energy-saving techniques. Green entrepreneurship is defined as an effort to minimize the environmental footprint and scilicet the total environmental and social costs caused by human entrepreneurial activities (Kummitha, 2021). Green enterprise companies are aware of the costs, innovation, and benefits of marketing and seek social and moral change in the entrepreneurial sector. There are two types of businesses that produce green products and those that use green techniques in the productive path. All types of green businesses contribute to a sustainable society (Hoogendoorn et al., 2020) and economic benefits (Affolderbach & Krueger, 2017; Crecente et al., 2021; Marin et al., 2015).

An understanding of ecopreneurship must begin at the beginning of the business or the start-up stage. A Green start-up can be defined as a start-up company in the environmental services or production industry which focuses on natural resources or natural conditions such as ecotourism, recycling, wastewater treatment, and biodiversity (Hoogendoorn et al., 2020; Peralta et al., 2019). The paradigm shift of production and consumption towards green products and services ultimately requires eco or green entrepreneurship in the market (Sarkar, 2013). The trend of emerging companies seeking to address these challenges suggests that the sustainable functioning of companies is possible due to mutual agreement on their socio-economic (Cheng et al., 2019; Klimenko et al., 2018) and ecological interests (Burzyńska et al., 2018; Mikhno et al., 2021; Papadopoulos et al., 2014). Green entrepreneurs or ecopreneurs as environmental problem solvers and social change agents can also be shown to target solutions at different levels, in line with the category proposed by several researchers (Boutillier, 2019; Kirkwood & Walton, 2010a; Schaltegger, 2002; Schaper, 2002).

The term eco-agropreneurship related to sustainability is also related to the term social. The mean of eco entrepreneurship also is highly related to social entrepreneurship. Preservation of nature is none other than the survival of humans as social beings (Palmås & Lindberg, 2013). Several researcher concluded that social entrepreneurship based on characteristics and processes include activities at the individual level that will lead to more discussion and debate about what these characteristics should be (Guerrero, 2021; Indaco-Patters et al., 2013; F. Wang & He, 2019). This debate can never be resolved, as it is unlikely that a definitive set of characteristics can be applied to all types of social entrepreneurial activity in all contexts. The debate surrounding the concept of social entrepreneurship suggests that focusing on outcomes (positive and negative) and context is the most meaningful way of understanding the term, theoretically and empirically. Social entrepreneurship has the potential to contribute and expand the organizational theory and is therefore promising as a domain by suggesting five possible avenues for building theory at different levels of institutional and social analysis of good ethics, volunteer activities or community programs, and job creation (Boutillier, 2019; Kunasekaran et al., 2018; Palmås & Lindberg, 2013; Thiers, 2002). Social entrepreneurship is a dynamic process through which certain types of individuals, who create and develop organizations (Cherrier et al., 2012; Fichter & Tiemann, 2018; Guerrero, 2021; Udiyana et al., 2018). The social business focuses on non-profit organizations increasingly seeking new resources from the market and adopting more efficient and market-oriented behaviors (Ball & Kittler, 2019; Mikhno et al., 2021; Ucenic & Bacali, 2008). Social entrepreneurship activities have far-reaching economic effects of increasing growth, reducing poverty, and promoting large-scale social development (Peter, 2021).

Social entrepreneurs must be able to define problems systematically that originate from the entire social system, such as the causes of inequality, human insecurity, or the global economic crisis (F. Wang & He, 2019; Yusoff et al., 2019). Understanding social problems by entrepreneurs aims to achieve systemic change by bringing about fundamental changes at the level of the social system, which prevents or reduces systemic problems. Peter (2021) proposed four dimensions of contextual social problems: acute poverty, informality, colonial history, and ethnic group identity as environmental factors. Social entrepreneurship in developing countries differs from what is recognized in most developed countries (Awotunde & van der Westhuizen, 2021; Ra et al., 2019; Yusoff et al., 2019). Zhao (2020) shows that small interest groups generate beneficial supply-side social capital under diverse entrepreneurial conditions. In fact, fixing some social issues is enormous fundamental to the

mission of a social enterprise that it is said to be included in the organization's business model (Mikhno et al., 2021). Meanwhile, Bacq and Janssen (2011) note that the influence of the external environment on individuals, processes, and organizations has received little attention in the social entrepreneurship literature. In these cases, Littlewood and Holt (2018) in Awotunde & van der Westhuizen (2021) state that social entrepreneurs have significant social capital, are in a relatively good financial position to start their business with, and have the relevant knowledge, skills, and experience to draw in. They have continue develop to overcome significant difficulties.

The social entrepreneurship theory closely relates to agriculture, especially in rural areas. Many studies on sustainable agrobusiness put forward the concept of the social entrepreneur. According to Yusoff, et. al. (2019), the concept of agropreneurship is being promoted to encourage business establishment related to the agricultural sector. The argue that the desire to become an entrepreneur in agriculture or agropreneur can be defined as a person's readiness for entrepreneurship by creating new agricultural business ventures for returns. Lifestyle changes are also opportunities for developing green products that make farmers can enjoy better selling points (Yusoff et al., 2019). Thus, agropreneurship aims to increase farmers' income as well as a stimulant for the younger generation to build rural economic strength through the food sector (Musa et al., 2021). Agropreneurship is the ability to manage agricultural businesses with the support of appropriate agricultural technology and pay attention to environmental sustainability. The agricultural business innovation process integrates three components: the strength of research & development institutions, entrepreneurial spirit, and venture capital (Kunasekaran et al., 2018).

Based on the combination of the terms eco-preneurship and agro-preneurship, it can be concluded from a terminology perspective that eco-agropreneurship is defined as the ability of entrepreneurs to manage the business in the agro-industrial sector through utilizing technology and promote eco-innovation. Eco-agropreneurship is a new term to define entrepreneurship in agriculture. This concept is highly closely related to the rural area only. Thus, the true eco-agropreneurs have to face the complexities of agroindustry in this area. Eco-agropreneurs utilize agribusiness objects, commodities, and agriculture products that are easily damaged due to changes in natural disasters and climate and environmental changes. The dimensions of eco-agropreneurship can be seen from the drivers (motivation and challenges), performance, eco-innovation, and agropreneurship. According to the organizational theory, the eco-agropreneurship and performance driver variables should be separated into another latent variable. Therefore, the indicator measurement of eco-

agropreneurship consists of eco-preneurship and agro-preneurship along with eco-innovation.

The measurement and definition of eco-agropreneurship are also explained in chapters 2 and 3. Furthermore, based on previous research, many indicators can explain the aggregate dimension of eco-preneurship and agro-preneurship, which will then be reduced through the principal component analysis process to become one or fewer variables. Factoring analysis is explained in sub-chapter 4.3

4.2. Factoring Analysis

Based on the results of the SLR analysis, 33 factors measure the eco-agropreneurship variable. Aggregate performance and driver dimensions are other latent variables. The main assumptions required to conduct the factor reduction test are the Bartlett test and the Kaiser Meyer Olkin (KMO) test (Kaiser & Rice, 1974; Masood & Sonntag, 2020). The following are the results of the Bartlett test and the Kaiser Meyer Olkin (KMO) test:

Table 12. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.956
Bartlett's Test of Sphericity	Approx. Chi-Square	13239.784
	df	528
	Sig.	.000

The SPSS results in a Barlett Test of Sphericity significance value of 0.000, fulfilling the requirements because the significance is less than 0.05 (5%). Meanwhile, the value KMO Measure of Sampling Adequacy (MSA) number is 0.956. Because the MSA number is above 0.5, the set of variables can be processed further. Furthermore, each variable is analyzed to determine which can be processed further and which should be excluded. After the Bartlett test and Kaiser Meyer Olkin (KMO) test have been carried out, the next step is the MSA test per variable.

The MSA in the table 12 is indicated in the Anti Image Correlation row with an “a” mark diagonally, can be seen in the appendix. Table Anti Image Correlation in the appendix is simplified, as shown in table 13.

Table 13. Anti-Image Matrix

Variable	MSA
EAP1	.923 ^a
EAP2	.949 ^a
EAP3	.968 ^a

EAP4	.936 ^a
EAP5	.963 ^a
EAP6	.924 ^a
EAP7	.957 ^a
EAP8	.963 ^a
EAP9	.938 ^a
EAP10	.949 ^a
EAP11	.970 ^a
EAP12	.986 ^a
EAP13	.937 ^a
EAP14	.913 ^a
EAP15	.964 ^a
EAP16	.982 ^a
EAP17	.976 ^a
EAP18	.959 ^a
EAP19	.965 ^a
EAP20	.956 ^a
EAP21	.953 ^a
EAP22	.973 ^a
EAP23	.969 ^a
EAP24	.962 ^a
EAP25	.946 ^a
EAP26	.952 ^a
EAP27	.966 ^a
EAP28	.966 ^a
EAP29	.946 ^a
EAP30	.972 ^a
EAP31	.941 ^a
EAP32	.945 ^a
EAP33	.954 ^a

Sources: SPSS data processing, 2022.

Based on Table 13, it shows that 33 of the tested variables meet the MSA requirements, which are above 0.5 so that they can be used for further testing.

Table 14. Communalities

Variable	Initial	Extraction
EAP1	1.000	.865
EAP2	1.000	.698
EAP3	1.000	.712
EAP4	1.000	.802

EAP5	1.000	.808
EAP6	1.000	.867
EAP7	1.000	.765
EAP8	1.000	.860
EAP9	1.000	.863
EAP10	1.000	.687
EAP11	1.000	.705
EAP12	1.000	.720
EAP13	1.000	.792
EAP14	1.000	.811
EAP15	1.000	.781
EAP16	1.000	.714
EAP17	1.000	.779
EAP18	1.000	.780
EAP19	1.000	.605
EAP20	1.000	.746
EAP21	1.000	.585
EAP22	1.000	.897
EAP23	1.000	.693
EAP24	1.000	.732
EAP25	1.000	.710
EAP26	1.000	.749
EAP27	1.000	.594
EAP28	1.000	.597
EAP29	1.000	.590
EAP30	1.000	.520
EAP31	1.000	.676
EAP32	1.000	.881
EAP33	1.000	.859

Sources: SPSS data processing, 2022.

Table 14 shows the communality value of the variables studied and whether they are able to explain the factors or not. Variables that are considered qualified to explain the factor if the extraction value is greater than 0.5. Based on the output table 14, the extraction value for all tested variables is greater than 0.5. Thus, it can be interpreted that all variables can be used to explain factors.

Next test is the total variance explained. Table 9 shows the total variance explained for each analyzed variable.

Table 15. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Var.	Cum. %	Total	% of Var.	Cum. %
1	21.661	65.638	65.638	21.661	65.638	65.638
2	1.614	4.891	70.529	1.614	4.891	70.529
3	1.164	3.528	74.057	1.164	3.528	74.057
4	.899	2.724	76.781			
5	.803	2.432	79.213			
6	.669	2.027	81.240			
7	.550	1.667	82.907			
8	.499	1.511	84.418			
9	.478	1.448	85.866			
10	.463	1.404	87.271			
11	.389	1.180	88.450			
12	.373	1.132	89.582			
13	.371	1.123	90.705			
14	.336	1.019	91.724			
15	.309	.936	92.660			
16	.269	.816	93.476			
17	.245	.742	94.218			
18	.242	.733	94.951			
19	.222	.672	95.623			
20	.202	.613	96.236			
21	.177	.536	96.772			
22	.161	.487	97.259			
23	.144	.437	97.696			
24	.127	.386	98.082			
25	.106	.321	98.403			
26	.100	.303	98.707			
27	.092	.280	98.987			
28	.078	.238	99.224			
29	.067	.202	99.427			
30	.059	.179	99.606			
31	.048	.144	99.750			
32	.047	.142	99.891			
33	.036	.109	100.000			

Sources: SPSS data processing, 2022.

In this dissertation, there are 33 variables/components analyzed. There are two kinds of analysis to explain a variance, namely initial eigenvalues and extraction sums of squared loadings. The initial eigenvalues variant shows the total number of variables in 33 components. In comparison, the extraction sums of squared loadings show the number of variations or factors that can be formed. Based on the table output total variance explained in the initial eigenvalues section, three factors can be formed from the 33 components

analyzed, where the requirement to become a factor is that the eigenvalue must be greater than 1.

- The eigenvalue factor 1 is $21.661 > 1$ and is able to explain 65.638% of the variation.
- The eigenvalue factor 2 is $1.614 > 1$ and is able to explain 4.891% of the variation.
- The eigenvalue factor 3 is $1.164 > 1$ and is able to explain 3,528% variation.

If the three factors are added together, it can explain 74.057% of the variation. These three factors also can be seen on the scree plot in the attachment. Furthermore, to determine the new factor and which component variable is included in the component factor, it is shown in table 16 Rotated component matrix.

Table 16. Rotated Component Matrix^a

	Component		
	1	2	3
EAP1	.121	.873	.296
EAP2	.454	.597	.369
EAP3	.629	.450	.337
EAP4	.826	.132	.321
EAP5	.761	.427	.216
EAP6	.294	.859	.206
EAP7	.620	.558	.263
EAP8	.787	.394	.292
EAP9	.387	.341	.772
EAP10	.675	.094	.471
EAP11	.567	.506	.357
EAP12	.537	.549	.361
EAP13	.245	.832	.199
EAP14	.189	.274	.837
EAP15	.726	.469	.181
EAP16	.627	.380	.419
EAP17	.595	.418	.500
EAP18	.592	.327	.568
EAP19	.585	.379	.344
EAP20	.528	.620	.287
EAP21	.438	.510	.364
EAP22	.668	.598	.306
EAP23	.643	.345	.401
EAP24	.453	.458	.563
EAP25	.771	.201	.273
EAP26	.592	.586	.236
EAP27	.337	.239	.651
EAP28	.653	.361	.202
EAP29	.482	.425	.421
EAP30	.385	.549	.267
EAP31	.452	.513	.456

EAP32	.397	.647	.553
EAP33	.445	.641	.500

Sources: SPSS data processing, 2022.

To ensure that a variable belongs to which factor group, it can be determined by looking at the largest correlation between the variable and the formed factor. The newly formed factor can be seen in table 17.

Table 17. New Factor Component

F1	F2	F3
EAP3	EAP1	EAP9
EAP4	EAP2	EAP14
EAP5	EAP6	EAP24
EAP7	EAP12	EAP27
EAP8	EAP13	
EAP10	EAP20	
EAP11	EAP21	
EAP15	EAP30	
EAP16	EAP31	
EAP17	EAP32	
EAP18	EAP33	
EAP19		
EAP22		
EAP23		
EAP25		
EAP26		
EAP28		
EAP29		

Sources: SPSS data processing, 2022.

4.3. Descriptive Analysis

4.3.1. Characteristic Respondent

This dissertation uses primary data where the data taken is the respondents' responses regarding the variables examined. Thus, it needs further analysis of the characteristics of the respondents' descriptions. This descriptive analysis is divided into several parts described in several subsections. Based on the data analysis by SPSS, the respondent description table as follows:

Table 18. Respondent Characteristic

	Frequency	(%)
Gender		

	Frequency	(%)
Male	199	63.8
Female	113	36.2
Age		
< 30 years	7	2.2
30 - 35 years	5	1.6
36 - 40 years	67	21.5
41 - 45 years	190	60.9
46 - 50 years	29	9.3
> 50 years	14	4.5
Education		
Primary School	20	6.4
Junior High School	60	19.2
Senior High School	205	65.7
Bachelor	13	4.2
Master and Doctor	14	4.5
Business Age		
< 5 years	8	2.6
5 – 10 years	70	22.4
11 – 15 years	199	63.8
16 – 20 years	27	8.7
> 20 years	8	2.5
Business Type		
Marine aquaculture business	7	2.2
Plantation business	63	20.2
Processing business	215	68.9
Other business	27	8.7
Number of employees		
< 5 workers	169	54.2
5 – 10 workers	105	33.7
11 – 15 workers	21	6.7
16 – 20 workers	17	5.4
> 20 workers	0	0
Religion		
Muslim	80	25.6
Christian	131	42.0
Catholic	58	18.6
Buddhist	20	6.4
Hindu	23	7.4
Income (In Million IDR/year)		
< 50	18	5.8
50 - 100	174	55.8
100 - 150	59	18.9
150 - 200	12	3.8
200 - 250	12	3.8
> 250	37	11.9

Sources: SPSS data processing, 2022.

4.3.1.1. Gender

The description of respondents based on gender is divided into two: male and female. Based on SPSS data processing, the number of male respondents is 199, equivalent to 63.8% of the total sample. Meanwhile, the number of female respondents is 113 people, or only equal to 36.2% of the total sample. Based on previous research, the role of women must be increased considering that gender equality issues have become a global issue, especially the role of women in entrepreneurship. In Indonesia, women have started entrepreneurship independently to help the family income (Hani et al., 2012). Even though women have a dual role as housewives and workers, they can also help the family economy (Lee Siew Kim & Seow Ling, 2001). For this reason, organizations and other related parties, including the government, play an important role in increasing women's entrepreneurial spirit, considering that women have several advantages such as being more detailed, diligent, patient, tenacious, disciplined in administration, and managing finances. The male respondents are higher than women due to the type of business in coastal areas, which are dominated by processing and plantation businesses (Tedmanson et al., 2012). The majority of this type of business is dominated by men because it involves physical work. Description of respondents by gender also shown in the figure 6:

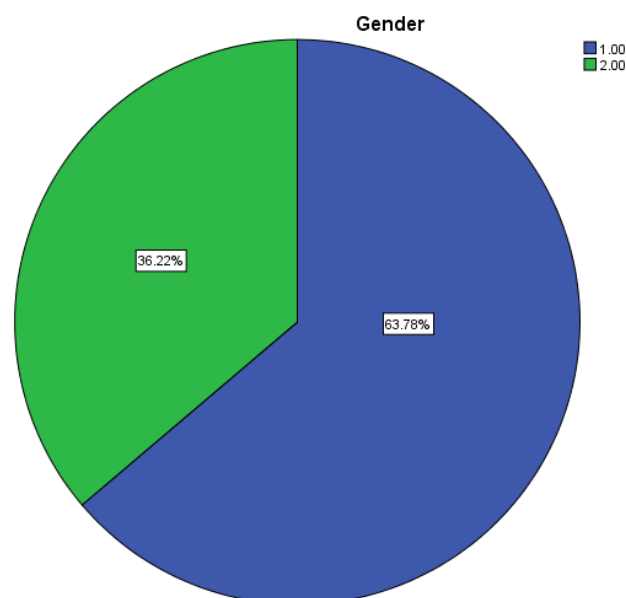


Figure 6. Descriptive Analysis Based on Gender

Source: SPSS output, 2022

4.3.1.2. Age

The respondent's age is an important part to be explained in-depth and specific analysis. Data regarding the respondent's age is transformed based on place and date of birth. The results of the respondent's description in table 18 show that the majority of respondents' ages are in the age range between 41-45 years, or equivalent to 60.9% of the total sample. The second highest age range is 36-40 years old, or equivalent to 21.5%. In comparison, the minimum age group is under 30 years, with a total of 7 entrepreneurs or only equal to 2.2% of the total sample. Referring to the previous researches stated that individuals over 30 years old are more eligible to set up a business and are a mature age group in entrepreneurship (Dvouletý et al., 2021; Ratten, 2019). This reason is that young entrepreneurs have the potential to experience business risks, and many are in haste to make a decision (Koe et al., 2012). Furthermore, the respondent's age description can be seen in the figure 7.

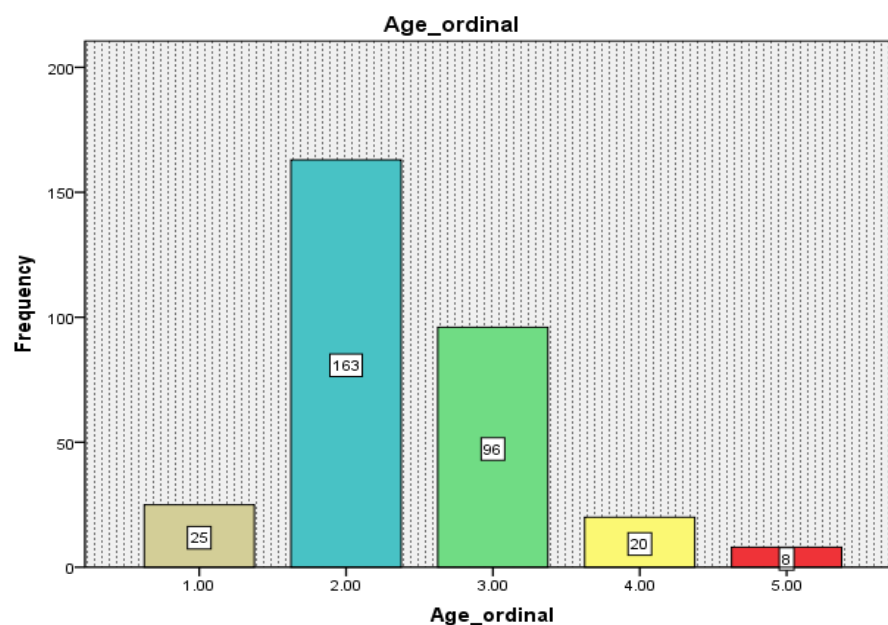


Figure 7. Descriptive Analysis Based on Age

Source: SPSS output, 2022

4.3.1.3. Education

Table 18 shows the respondent's description based on education level. Education plays an essential role in the entrepreneurial decision-making process. To ignore educational aspects are wrong measures. Education taken by the respondents is not directly related to entrepreneurship, but their cognitive, affective, and psychomotor aspects have been established (Hidayatullah et al., 2020; Manesh & Rialp-Criado, 2019). The question asked by the surveyor was the number of formal years of education taken. Thus, it divides the range of years of education based on the education level in Indonesia as follows:

- 1 – 6 years : Primary school
- 7 – 9 years : Juniou high school
- 10 – 12 years : Senior high school
- 13 – 16 years : Bachelor
- ≥ 17 years : Master or Doctor

Based on SPSS descriptive analysis in table 18, it can be seen that the majority of entrepreneurs in coastal areas have a senior high school education level or more towards vocational studies with a total of 205 respondents or equivalent to 65.7% of the total sample. The phenomenon of vocational education can be explained on the basis of characteristics that are different from general education, both in terms of educational criteria, subject matter, and graduates. The criteria attached to the vocational education system according to Finch and Crunkilton (1999), include (1) education and training orientation; (2) justification for existence and legitimacy; (3) focus on curriculum content; (4) learning success criteria; (5) sensitivity to community development; and 6) cooperative relations with the community. Based on the results of this descriptive analysis, it is explained that senior high school has a significant opportunity to build the economic system by utilizing the stages of adolescent development and educating students to be entrepreneurs (Siregar & Marwan, 2020). The developmental stage of late adolescence is marked by a growing interest in the functions of the intellect. This explanation is also followed by the result that the second highest education range is junior high school. While the Education group with the least number is bachelor. The results of this study complete the research by Djibaran et al (2018). This shows that there is still a lack of attention from the government and related institutions to pay attention to entrepreneur programs for the student. Most undergraduate graduates choose jobs as company employees or civil servants because of the demands of the prestige of education status and the image instilled by their parents (Kristiansen & Ramli, 2006). Moreover, the descriptive analysis of education is shows by figure 8:

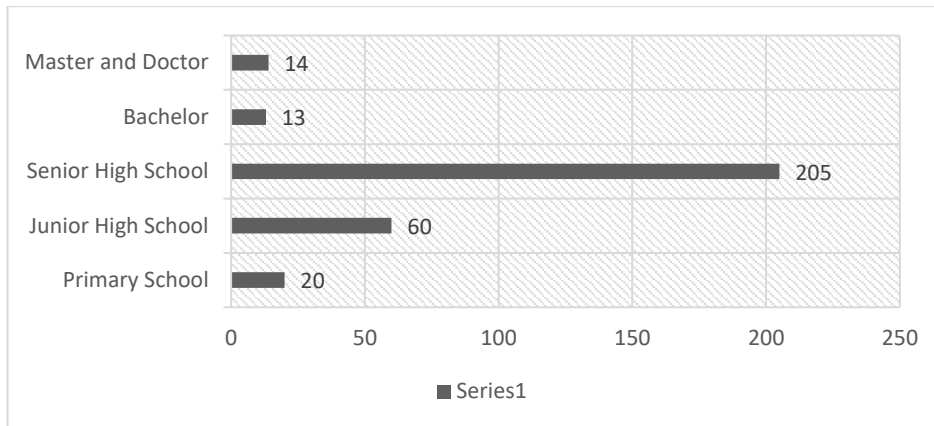


Figure 8. Descriptive Analysis Based on Education

Source: SPSS output, 2022

4.3.1.4. Business Age

Business age analysis is also important in business performance. The increasing age of the company can determine the way of thinking, acting, and behaving as well as the level of maturity in making an entrepreneur's decisions in running the business.

Based on the results of the descriptive analysis in table 18, it can be seen that the age of the business is divided into 5 categories. The majority of business age is in the age range between 11-15 years of 199 businesses or 63.8% of the total sample. The second highest number of businesses is 5 – 10 years, or equal to 22.4% of the total research sample. In other words, most of the research sample has a reasonably high business age and indicates good business experience (Almashaqbeh et al., 2019; Rozmi et al., 2020). This is related to where the public can get to know the products produced by MSMEs and the increasing business age. The description of the age of the business can also be seen in the figure 9:

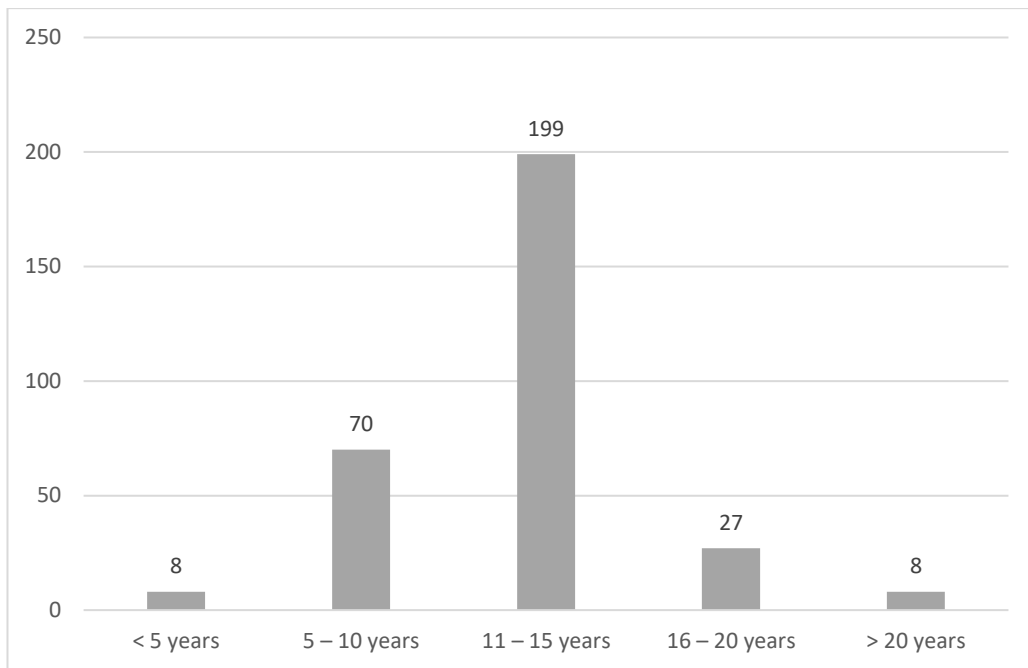


Figure 9. Descriptive Analysis Based on Business' Age

Source: SPSS output, 2022

4.3.1.5. Type of Business

Based on the analysis descriptive of business type, table 18 shows that most types of businesses in coastal areas are processing businesses, with a total of 215 businesses equivalent to 68.9% of the total sample. This fish and agricultural product processing business is usually a small size or home-based business. Processing marine and agricultural products in coastal areas still use simple methods, and anyone easily opens a business. In addition, this processing business also includes a culinary business. Culinary business is multiplying in coastal areas because, apart from processing fishery and agricultural products, this type of business is the easiest to set up and make a profit (Giantari et al., 2022; Kerap et al., 2017; Widjanarko et al., 2021; Yuniarty et al., 2021). This type of business is often less concerned with environmental impacts such as waste caused by selling food in achieving business goals. In contrast, the smallest number is the marine aquaculture business. This type of business usually involves a lot of labor and requires relatively large resources. Based on table 18, the number of Marine aquaculture businesses is 7 businesses or equivalent to 2.2%. Furthermore, the characteristics of the business based on the type of business can be seen in the figure 10.

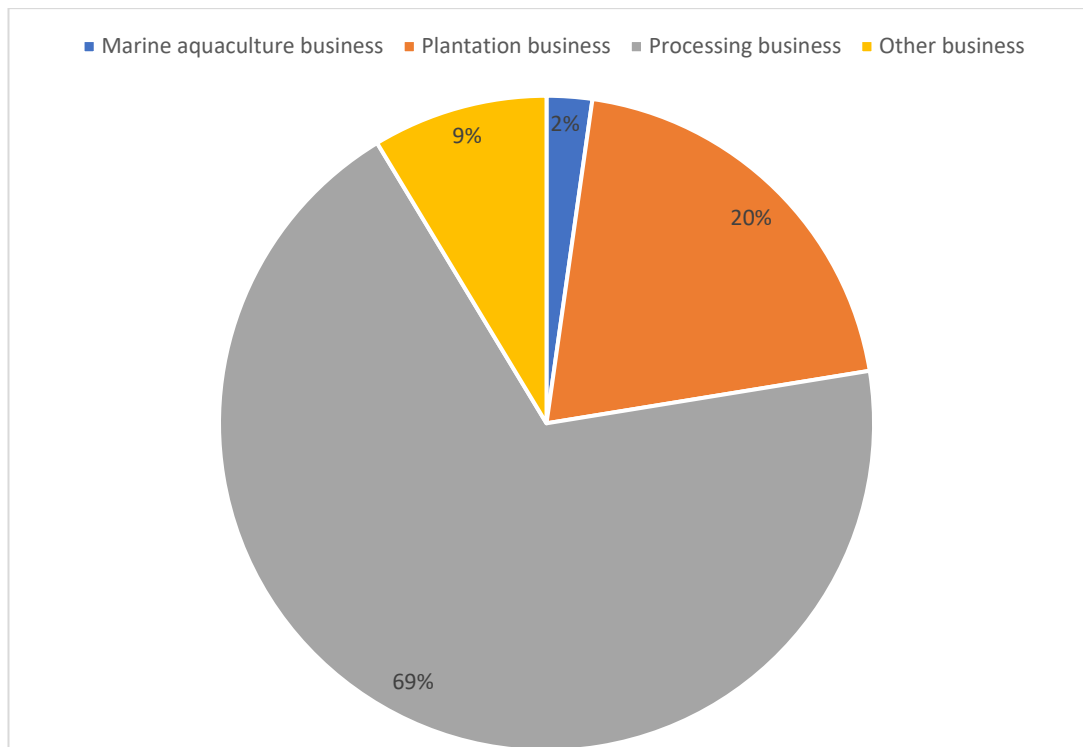


Figure 10. Descriptive Analysis Based on Business Type

Source: SPSS output, 2022

4.3.1.6. Number of Employee

The ability of each SME unit to absorb labor still has limitations. The low absorption of labor by existing SME units can occur due to the limited ability of SMEs to manage a large workforce in addition to maintaining the effectiveness and efficiency of these SMEs. Based on the results of the table 18 of respondent's description, it is known that the number of businesses that have a workforce of less than 5 people is the dominant one with a total of 169 businesses or equivalent to 54.2%. This result is in line with the results of the description analysis based on the type of business, where the dominant factor is the processing business because the type of business is relatively small with a small workforce. MSMEs, which have a workforce ranging from 5 to 10 employees, are the second largest. While the number of workers more than 20 workers is 0 businesses. The number of frequency 0 is due to the fact that companies that have a large number of workers are also followed by a large amount of assets. Thus, companies with these characteristics are eliminated by the data outliers. The ability to absorb labor is one of the advantages of MSMEs. This result is evident not from the number of workers per business but by the increase in the number of businesses that increases the number of labor absorption. The number of businesses with a workforce of more than 20, which include an outlier, is only

4, with a total of 273 workers. Meanwhile, the 312 businesses used as samples have 1,801 workers. The descriptive based on number of employee can be seen in the figure 11:

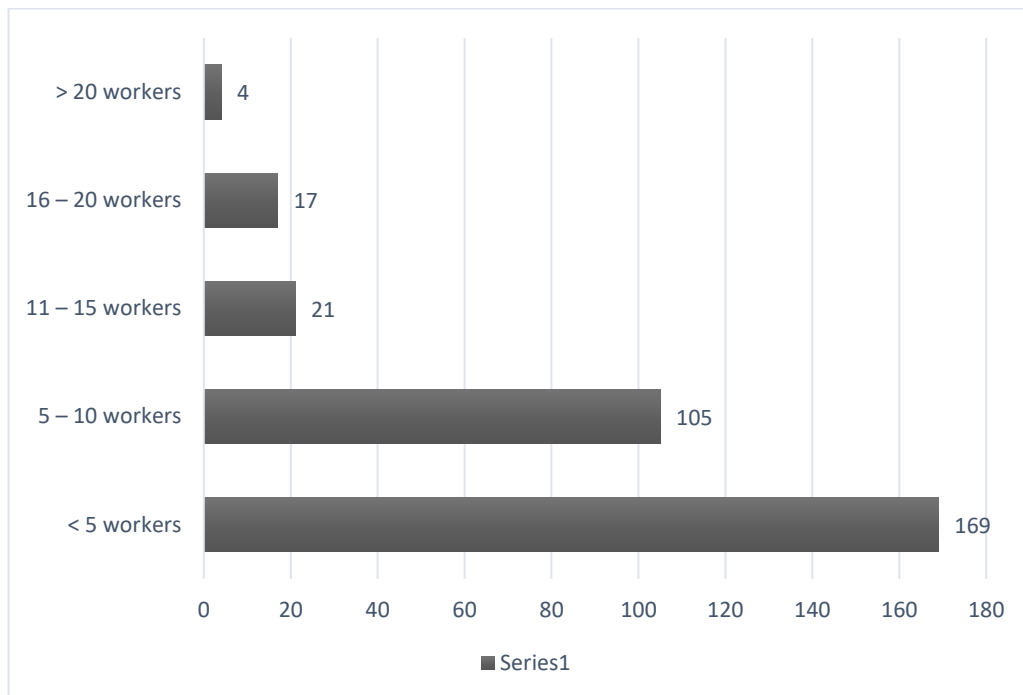


Figure 11. Descriptive Analysis Based on Number of Employee

4.3.1.7. Religion

Based on previous research, religion is closely related to local culture. Several studies claim about the effect of the level of religiosity on performance, and it is essential to analyze religion distribution. Based on the results of descriptive table 18, the majority of religions in this dissertation are Christian, with a total of 131 respondents, or equal to 42%. The second largest religion based on the number of samples is Muslim, with 80 respondents or 25.6%, followed by Catholic, Hindu, and Buddhist with a total of 58, 23, and 20 respondents, respectively. Based on statistical data, the total population of Indonesia was 273.87 million as of December 31, 2021. This number increased by 1.64 million compared to the position on June 30, 2021, which was 272.23 million. There are 238.09 million people, or 86.93% of Indonesia's population are Muslim, 20.45 million (7.47%) of Indonesia's population are Christians, 8.43 million people (3.08%) are Catholic, and 4.67 million (1.71%) are Hindus (Indonesian Central Bureau of Statistics, 2020). Compared with the distribution of the sample in this dissertation, the results of the description imply that religion distribution in coastal areas is well spread and not dominated by one religion exclusively. The results of the comparative description of the distribution of religion between the study sample and the Indonesian population are shown in the following column diagram:

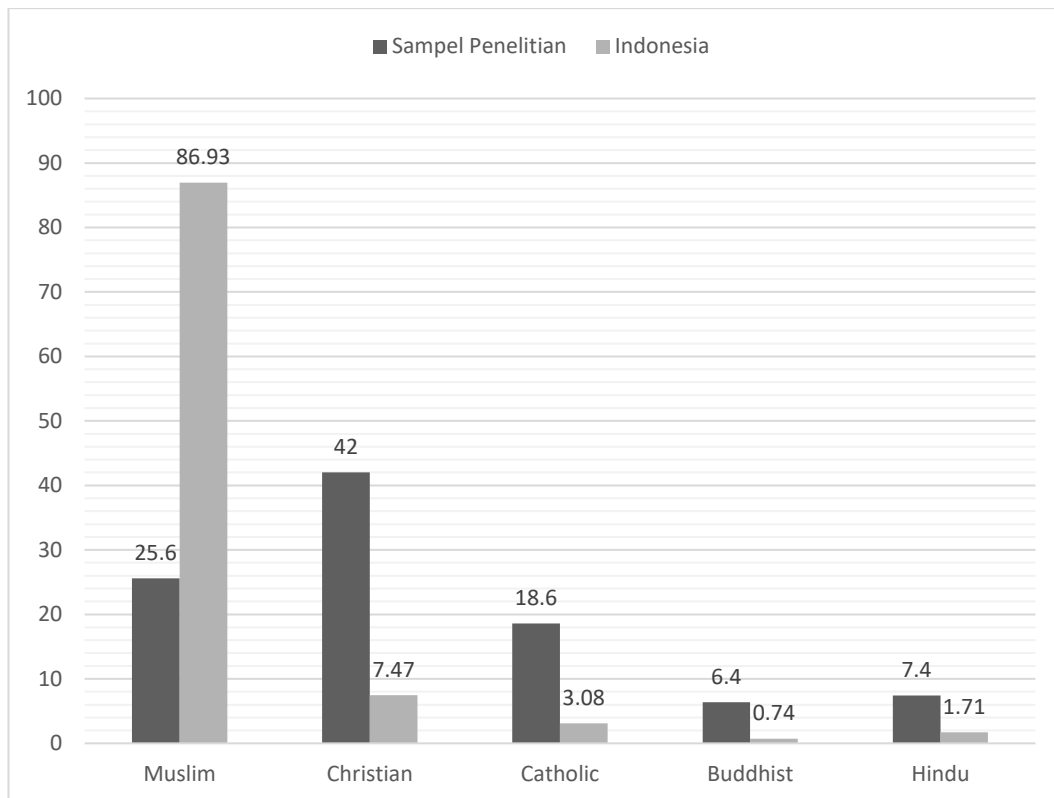


Figure 12. Descriptive Analysis Based on Religion

Source: SPSS output, 2022

Several previous studies tried to examine religion as a rule that humans must obey in their lives. These rules will be used as a reference and sorter for humans when they behave and act in daily activities. On the other hand, humans still have leeway in their activities, but there must be a separation in the norms that exist in their religion. Muharom Albantani & Madkur (2018) argue that religiosity is a commitment from an individual to believe according to his religion and behave in daily life. The attitude of an individual's religiosity is a combination of religious knowledge, feelings, and actions. This commitment is the basis of an entrepreneur in improving his business performance.

4.3.1.8. Income

Data on the income of MSMEs in coastal areas in Indonesia is sensitive because it is related to various things, such as taxes, credit payments, etc. Analysis of the description based on income is obtained by asking daily, weekly, or monthly income, and then the surveyor converts it to yearly/annual. This income data is also used to compare respondents' answers to the question of measuring the performance variable, not as the primary measurement of the variable. From the descriptive data analysis in table 18, the income distribution is from less than 50 million IDR to above 250 million IDR. The majority of research respondents

have incomes in the range of 50 million - 100 million IDR per year. These results are in line with the respondents' descriptions based on the type of business and the number of employees. The problem of income in coastal areas as a part of rural areas is seen not only from the number but also in the distribution of income received by the community (Kindangen et al., 2019; Paruntu & Tumiwa, 2016).

The direction of the distribution of income and expenditure in Indonesia showed first by the acquisition of production factors (Amir et al., 2013; Tumiwa, 2020). In this case, the most important factor is land/capital. Second, job acquisition of work for those who do not have sufficient land to obtain full employment opportunities. Third, the rate of rural production, in this case, the most important thing is the production and the direction of the price manifestation given to the product. Likewise, the analysis of respondents' descriptions based on income can also be seen from the following column diagram:

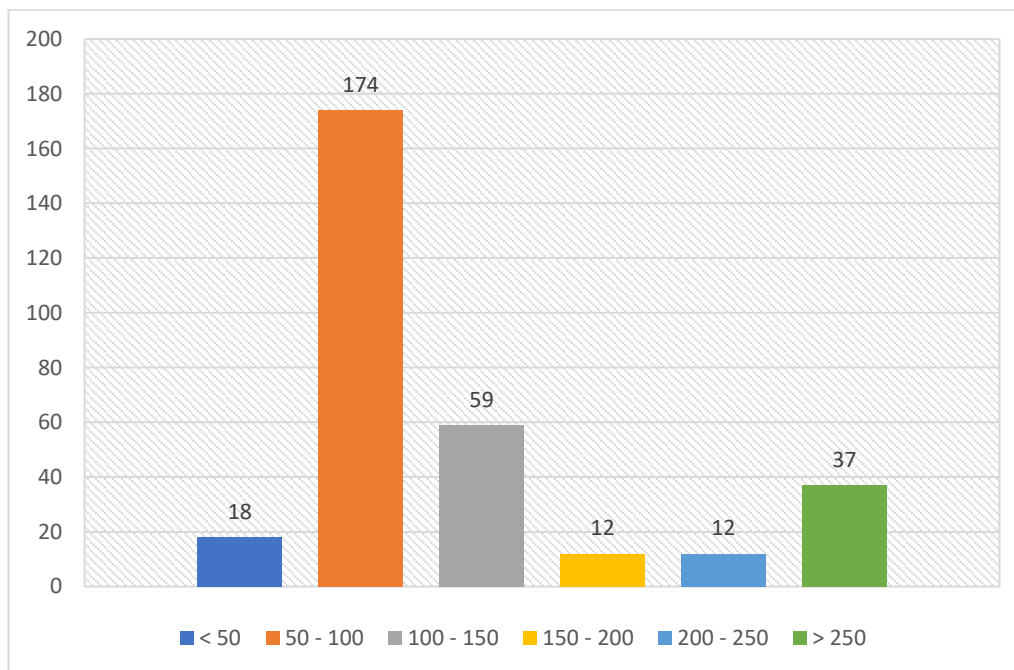


Figure 13. Descriptive Analysis Based on Income Range

Source: SPSS output, 2022

4.3.2. Variable Descriptive Analysis and Interpretation

Descriptive statistics are collecting, structuring, summarizing, and presenting data to be more meaningful, easy to read, and understood by data users. It is necessary to recall that descriptive statistics are only limited to illustrating the characteristics of the object under study without the intention of generalizing the sample to the population. Descriptive statistics are used to explain or provide an overview of the characteristics of a data set without drawing general conclusions (Ghozali, 2008). This dissertation will use descriptive

statistical analysis that consists of mean, maximum, minimum, and standard deviation values. The respondent's level of achievement (RLA) value is the most important to see whether the respondent's answer is above average or not. In addition to the RLA value, the discriminant analysis lambda value, or loading factor is also important to see if the indicator is valid to analyze in the PLS-SEM model. The following is a description of variable analysis:

4.3.2.1. Eco-agropreneurship

The following variable is the connecting variable or a mediator for other variables in improving business performance. Here is the description analysis 33 indicators of Eco-agropreneurship:

Table 19. Descriptive Analysis Variable EAP

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N	
						Valid	Missing
EAP1	7.23	.79370	5.00	8.00	.923 ^a	312	0
EAP2	7.36	.78643	3.00	8.00	.949 ^a	312	0
EAP3	7.36	.69065	4.00	8.00	.968 ^a	312	0
EAP4	7.28	.96833	3.00	8.00	.936 ^a	312	0
EAP5	7.29	.81559	4.00	8.00	.963 ^a	312	0
EAP6	7.17	.77190	4.00	8.00	.924 ^a	312	0
EAP7	7.29	.79479	3.00	8.00	.957 ^a	312	0
EAP8	7.34	.74566	5.00	8.00	.963 ^a	312	0
EAP9	7.26	.83810	3.00	8.00	.938 ^a	312	0
EAP10	7.36	.81455	3.00	8.00	.949 ^a	312	0
EAP11	7.19	.84427	4.00	8.00	.970 ^a	312	0
EAP12	7.30	.80207	3.00	8.00	.986 ^a	312	0
EAP13	7.12	.84131	4.00	8.00	.937 ^a	312	0
EAP14	7.15	.97330	3.00	8.00	.913 ^a	312	0
EAP15	7.22	.84544	4.00	8.00	.964 ^a	312	0
EAP16	7.23	.86256	3.00	8.00	.982 ^a	312	0
EAP17	7.21	.84605	4.00	8.00	.976 ^a	312	0
EAP18	7.21	.86217	4.00	8.00	.959 ^a	312	0
EAP19	7.22	.86322	4.00	8.00	.965 ^a	312	0
EAP20	7.27	.83009	4.00	8.00	.956 ^a	312	0
EAP21	7.19	.92774	4.00	8.00	.953 ^a	312	0
EAP22	5.30	.73161	3.00	6.00	.973 ^a	312	0
EAP23	7.26	.81869	4.00	8.00	.969 ^a	312	0
EAP24	7.19	.85937	4.00	8.00	.962 ^a	312	0
EAP25	7.21	.91991	4.00	8.00	.946 ^a	312	0
EAP26	7.18	.80835	4.00	8.00	.952 ^a	312	0
EAP27	7.35	.70322	4.00	8.00	.966 ^a	312	0
EAP28	7.16	.78436	4.00	8.00	.966 ^a	312	0
EAP29	7.00	.75225	4.00	8.00	.946 ^a	312	0
EAP30	7.08	.84009	4.00	8.00	.972 ^a	312	0
EAP31	7.15	.85607	4.00	8.00	.941 ^a	312	0
EAP32	7.31	.71100	5.00	8.00	.945 ^a	312	0
EAP33	7.19	.67351	5.00	8.00	.954 ^a	312	0

Sources: SPSS data processing, 2022.

Based on the results of the descriptive analysis in table 19, all the mean values of the EAP measurement indicators are above the average value of 4.5. The lowest mean value is EAP22, namely industrial machine maintenance. The results of this description can be interpreted that the research sample is mostly small businesses engaged in the processing industry, which is also in the culinary industry. Therefore, if there is a problem with tableware and cooking utensils, it is better for the owner to buy a new one rather than repair it. Furthermore, the highest mean value is the EAP2, EAP3, EAP10 indicator.

Ecopreneur orientation is one of the indicators with the highest mean value. In this dissertation, the respondent's tendency to become an entrepreneur is the respondent's interest in green products or environmentally friendly businesses, which is caused by regional culture closely related to the harmonious relationship between humans and nature. They are aware of being an eco-agropreneur because they run a business not solely for profit but believe that an environmentally friendly business can fulfill their life needs with a sustainable business. It is also inseparable from the enormous natural resources, which in this dissertation will be measured on the latent variable coastal area. Perception orientation or focus on preserving the environment also comes from the way of life of local society concerned with local culture in protecting the environment.

In addition to the perception of orientation, the eco-agropreneurship measurement indicator with the highest mean value is the EAP3 indicator, waste containment which is garbage dumps, garbage truck scheduling, etc. These results phrased that according to respondents, the availability of waste containment, or garbage trucks is one of the leading indicators of implementing eco-agropreneurship. These findings are closely related to supporting facilities from the government as an indicator of the external factor of EF1 (W. David & Ardiansyah, 2017). This indicator also has a high mean value in the external factor description analysis. During the COVID-19 pandemic, MSMEs in rural areas need intensive government waste management. Waste is more diverse according to the needs during the pandemic, such as increased use of masks (Borongon & NaRanong, 2022). This perception of waste handling is still limited to the negative impact on humans and the environment, such as water pollution (Manoiu et al., 2022). Water pollution can occur when waste is dumped into rivers instead of in a trash can, and this often occurs in areas not accessible by the garbage cleaning team, such as in remote areas. Based on open-ended questions to the respondents, most explained the mechanism for handling waste by the local government, where garbage is collected at one point and then transported by motorized carts (Mangindaan et al., 2022). In addition to polluting river water, waste or garbage disposal

can also hamper the groundwater process. In addition to polluting rivers and hindering groundwater, garbage can pollute the soil. Other things are burned in the house's yard, considering that burning garbage, especially inorganic waste, can damage the environment if done continuously. Therefore, waste handled by the local government also makes respondents' perceptions of waste management in indicators EAP17, EAP18, EAP19, and EAP20 less valuable as indicators with a high mean value.

Subsequently, EAP 10 which is the use of social media in business. This issue is growing rapidly during the pandemic resulted in the perception of businesses starting to prioritize social media, online delivery services, and other business applications to be used to improve performance (Afrianty et al., 2022; Kusumawati et al., 2021; Rahayu & Day, 2015). The previous method of marketing is using a brochure that is distributed with a tissue as a compliment for those who take the brochure. This method was the opposite way with the eco-agropreneurship concept. Thus, it can be interpreted that COVID-19 triggers the business to transform the business operations to utilize the technology for better environmental protection.

Furthermore, the eco-agropreneurship variable has been analyzed for factor reduction using PCA, the loading factor in this description analysis using the MSA value based on the results of anti-image correlation, and various assumptions have been met and formed three new factors as follows:

Table 20. Descriptive EAP after Factor Reducing

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
F_EAP1	7.10	.77811	5.00	8.00	0.917	312	0	Inclusion
F_EAP2	7.18	.69268	5.00	8.00	0.926	312	0	Inclusion
F_EAP3	7.22	.76444	4.00	8.00	0.903	312	0	Inclusion

Sources: SPSS data processing, 2022.

From the discriminant analysis of the loading factor values in table 20, all the new factor indicators showed a value more than 0.7, which means that all the indicators can be used as manifest variables in the PLS-SEM model.

4.3.2.2. MSMEs Performance

The last variable in this dissertation is the performance measure of MSMEs. This variable is determined based on financial and non-financial performance. However, the measurement is the respondents' opinion about their perceived business performance. The following is a variable description and their discriminant analysis:

Table 21. Descriptive Analysis and Loading Factor of BP

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
BP1	7.24	.96564	1.00	8.00	0.866	312	0	Inclusion
BP2	7.23	1.05159	2.00	8.00	0.988	312	0	Inclusion
BP3	7.18	1.19379	2.00	8.00	0.898	312	0	Inclusion
BP4	7.25	1.05399	2.00	8.00	0.932	312	0	Inclusion
BP5	7.25	1.02462	2.00	8.00	0.992	312	0	Inclusion

Sources: SPSS data processing, 2022.

Based on table 21, it is known that the respondent's perception of the MSMEs performance variable shows that respondents give a critical value because it has a mean value above the average. The highest mean value is in the BP4 and BP5 indicator, which means that respondents are satisfied that there is an increase in either the quality of employees or the quality of their own work (Bushi, 2021; Strielkowski, 2012). According to previous research, besides financial motivation, satisfaction and skill improvement are one of the motivations for someone to become entrepreneur that carry the issue sustainability (Indaco-Patters et al., 2013; Kirkwood & Walton, 2010b; Manesh & Rialp-Criado, 2019; Santini, 2017). The smallest mean value is on the BP3 indicator, which means that the respondent's perception of increasing market share is less than other indicators. This also proves that for small businesses size, market share is not the main priority compared to other financial and non-financial factors, especially regarding to the environmental protection (Jacobson & Aaker, 1985; Rumelt & Wensley, 1981; A. Triguero et al., 2013). Based on the value on a column of factor loading or lambda, it can be said that all MSMEs performance indicators meet the validity test.

4.3.2.3. Internal Factor

Internal factor analysis is intended to see the level of respondent's response to the measurement of the latent variable of Internal Factor (IF) based on 5 (five) manifest variables. The following are the results of the descriptive analysis and discriminant analysis:

Table 22. Descriptive analysis of IF

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
IF1	7.04	1.24011	1.00	8.00	0.811	312	0	Inclusion
IF2	7.25	.88570	2.00	8.00	0.794	312	0	Inclusion

IF3	7.10	.82621	5.00	8.00	0.697	312	0	Exclusion
IF4	7.30	.78588	4.00	8.00	0.957	312	0	Inclusion
IF5	7.10	1.04175	3.00	8.00	0.861	312	0	Inclusion
IF6	7.29	.75325	4.00	8.00	0.958	312	0	Inclusion
IF7	7.22	.80939	4.00	8.00	0.981	312	0	Inclusion

Sources: SPSS data processing, 2022.

Based on table 22, the average value of the IF variable measurement indicator is above the average of 4.5. According to respondents' answers for the internal factor indicators, the highest mean value is the IF4 which is the competitive pricing strategy. Businesses in rural areas always prioritize competitive prices over other indicators (Gregory et al., 2007; Olivia et al., 2020; Parnell et al., 2015). This result is related to the income level in rural areas that are relatively low. People consider price more than quality or other factors because of limited purchasing power. Meanwhile, the indicator with the lowest mean value is the IF1, namely education and experience. The results of this analysis are also in line with the findings of the respondents' characteristic descriptive analysis based on formal education (Djibran et al., 2018). This finding has different opinion with Baldacci et al. (2008) about education is one pivotal role for technology adoption. Mean while, according to this findings, all the research sample care and use IT for their business without having high formal school. Other studies also confirm that vocational education is important in creating high-quality entrepreneurs in Indonesia (Ilyas & Semiawan, 2012; Malihah & Setiyorini, 2019; Suharno et al., 2020). Educational level equivalent to a bachelor's degree or higher will tend to work as an employee in a company because it is related to the pressure of the prestige of an education degree from the community, especially from the family circle. Meanwhile, based on the loading factor value, the IF3 indicator does not meet the research criteria to be used as a manifest variable from the latent variable of IF because the loading factor value is below 0.7. This finding indicates that small rural businesses have low start-up budgets. This finding is also related to the respondent descriptive analysis based on the type of business and number of employee where the business is easy to start, relatively family members as the employee, low budget financial capital, low income, etc. Furthermore, the IF3 initiator is removed from the research model.

4.3.2.4. External Factor

Another variable used in PLS-SEM is External Factor (EF). This variable is one of the exogenous variables in this dissertation's SEM analysis. The following is a descriptive and discriminant analysis of external factor variables:

Table 23. Descriptive analysis of EF

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
EF1	7.48	.69899	4.00	8.00	0.797	312	0	Inclusion
EF2	7.35	.73327	5.00	8.00	0.974	312	0	Inclusion
EF3	7.39	.74045	5.00	8.00	0.948	312	0	Inclusion
EF4	7.43	.75353	5.00	8.00	0.924	312	0	Inclusion
EF5	7.31	.87404	5.00	8.00	0.895	312	0	Inclusion

Sources: SPSS data processing, 2022.

Based on the results of the descriptive variable of EF, it is known that all indicator values are above the average. This result means that all indicators meet the RLA value. The highest average value is on the EF1 indicator, which is 7.48. This result is interpreted that MSMEs in rural areas are very dependent on government facility support, such as the availability of roads, clean water, energy sources, energy prices, etc. This study's results align with research conducted by previous researches on the effect of government support on small businesses such as financial supporting, infrastructure, policy, etc. (Tumiwa et al., 2020; Tumiwa & Nagy, 2021; Tumiwa & Paruntu, 2017). In addition, all research indicators qualify as manifest variables because the loading factor value is above 0.7.

4.3.2.5. Coastal Area Knowledge

Coastal area knowledge is one of the important variables in the eco-agropreneurship model. This variable is the respondent's answer about how far they know their local advantages, specific local skills, etc., which will affect eco-agropreneurship. Therefore, it is essential to investigate whether the description of the respondent's answers acquires the achievement target and whether this variable is valid based on the discriminant analysis results. The 4 (four) manifest variables in this dissertation are as follows:

Table 24. Descriptive analysis of CA

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
CA1	7.21	.87329	1.00	8.00	0.876	312	0	Inclusion
CA2	7.01	1.07871	3.00	8.00	0.874	312	0	Inclusion
CA3	7.06	1.02182	2.00	8.00	0.861	312	0	Inclusion
CA4	7.06	.94668	2.00	8.00	0.980	312	0	Inclusion

Sources: SPSS data processing, 2022.

In this dissertation, local knowledge differs from the eco-agropreneurship variable to see if this variable can affect eco-agropreneurship. Based on the results of the description analysis, it is known that the CA1 indicator is the indicator with the largest mean value. This can be interpreted as local knowledge or traditional knowledge, which is still embraced by several groups/communities and contains many noble values of the nation's culture, which are still strong as the identity of the character of its citizens (Tymoczko, 2001). However, on the other hand, the value of local wisdom is often negated or ignored by the current modern cultural development (Agatha, 2016; Munir et al., 2021). In fact, the traditional environmental management system has proven to have an important value in protecting and preserving the environment, including in the social and economic context, especially for the people whose lives depend on fishery and agricultural products (Wibowo et al., 2021). Concerning the utilization, use, and management of environmental protection, this indigenous knowledge, with their local wisdom, the power to hold on to their customary law, spiritual ability, and the religion they profess, are wiser than other modern societies (Kissiya & Biczó, 2022; Touwe, 2020; Wibowo et al., 2021). The sample in this dissertation of local wisdom is categorized from four different regions. Each region has its characteristic for ecological preservation. For example in Maluku they have "Sasi ikan lampa" (Sasi culture for flying fish); in North Celebes, "Mapalus"; Gorontalo: "Dayango". In that context, values in society that still exist and maintain their local wisdom become an inseparable part of the development of Indonesian culture

This description is also in line with the previous research that states the Indonesian nation in the past was famous for the characteristics of a friendly, wise, helpful society, tolerance, mutual respect, and various other positive moral behaviors (Hidayati et al., 2020; Karuna & Serpara, 2021). These beliefs and traits are almost evenly spread in all levels of society in Indonesia. Thus, it is known that Indonesian people have noble values that are preserved in their lives. Therefore, it is not surprising that there are comments from almost every foreign nation who visits Indonesia stating that the Indonesian people are warm, kind, and friendly. The formation of noble values that can pattern the behavior of Indonesian people is due to the strong role of customs, which become a culture in people's lives. Although each region's customs and culture are different, they generally have the same essential values. On average, traditional and cultural philosophies that have developed in various corners of the Indonesian nation instill good and positive moral attitudes and behaviors. The traditional

guidelines, cultural formations, recommendations, and taboos are thick in the life of the Indonesian people.

Thus, the formation Indonesian's character is strongly influenced by local cultural values and customs in each region (Adriani & Supriatna, 2019; Muharom Albantani & Madkur, 2018). The belief in the habits and beliefs of the ancestors that were built in people's lives can become a medium for inculcating values in each individual in a society and becomes a personality, nature, behavior, habit, and attitude of life that is rooted in the local wisdom that grows around them (Kissiya & Biczó, 2022; Muharom Albantani & Madkur, 2018; Nasser et al., 2021). Many people are still maintaining their local wisdom, and later in the PLS-SEM analysis, it will be seen whether this knowledge of local culture can affect eco-agropreneurship. Furthermore, based on the loading factors, all indicators are valid to next PLS-SEM analysis.

4.3.2.6. Economics Awareness

In this dissertation, the variable economics awareness is one of the exogenous variables. Thus, it is also essential to analyze the variable description and discriminant analysis to determine whether this variable is valid for PLS-SEM analysis. The following table describes the economic awareness variable:

Table 25. Descriptive Analysis of EA

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
EA1	7.18	.82533	4.00	8.00	0.865	312	0	Inclusion
EA2	7.18	.78540	5.00	8.00	0.821	312	0	Inclusion
EA3	7.40	.65424	5.00	8.00	0.863	312	0	Inclusion
EA4	6.92	1.31545	2.00	8.00	0.632	312	0	Exclusion
EA5	7.35	.71100	5.00	8.00	0.890	312	0	Inclusion
EA6	7.04	1.14858	2.00	8.00	0.629	312	0	Exclusion

Sources: SPSS data processing, 2022.

The economics awareness variable is the respondent's answer about their level of awareness of the current economic situation, specifically to COVID-19 and R-YouC. Based on the results of the variable description analysis, it is known that all variables have values above the average. The indicator with an enormous mean value is EA3, namely awareness to help

others. In rural areas, as the object of research, many people still care about others. The spirit of togetherness, such as in *Gotong Royong* (in the Indonesian Language), in local languages known as *Mapalus*, *Masohi*, *Helem Foi Kenambai Umbai*, etc., is still closely embraced by the local community (Crawford et al., 2004; Kalangi et al., 2021). Based on experience, in almost every village visited by the research team and surveyors, local people often invite them for a meal, lunch, or dinner as a local tradition. Thus, when COVID-19 and R-YouC threaten the people's economy, community solidarity is urgently needed to restore the national economy from rural areas. Another descriptive result is that the lowest mean value is the EA4 indicator, namely compliance with health protocols. The results of this description can be interpreted that compliance with the health protocol has no impact on business performance or the concept of implementing eco-agropreneurship. Even preventive measures by the government by complying with health protocols are considered less effective by respondents. In open-ended questions by the research team and surveyors, the respondents did not agree with the government's actions regarding restrictions, commercialized PCR tests, immunizations, etc. This preventive action by the government is considered to have weakened MSMEs and benefited large-scale business and political elites. This finding is in line with Johan (Marinthe et al., 2020), who found that high-level conspiracy occurred due to a pandemic outbreak although the debates are still wide open (Douglas, 2021; Pummerer et al., 2022; Uscinski et al., 2020). Furthermore, based on the loading factor value, it was found that the indicators EA4 and EA6 could not be used as manifest variables for the latent variable of Economics Awareness.

4.4. Structural Equation Modeling

The data processing technique used is the SME method based on PLS method. The PLS software used in this dissertation is from software developed at the University of Hamburg, Germany, named *SmarPLS* version 3.0 M3. This dissertation uses reflective measurement using reliability and validity. Each latent variable must be able to explain each indicator's variance by at least 50%. Therefore, the total correlation between the latent variables and their indicators must be more than 0.7. For reliability, this dissertation uses Cronbach's Alpha, composite reliability, AVE (also for validity), and ρ_A . This dissertation uses two stages of measurement.

The first stage is the evaluation of the outer model or measurement model. The second stage is the evaluation of the inner model or structural model. The measurement model consists of observable indicators. The structural model consists of latent constructs that cannot be

observed. This test also estimates path coefficients that identify the strength of the relationship between the independent variable and the dependent variable. The measurement model consists of the relationship between observable variable items and the latent construct that is measured by these items.

Based on the descriptive result, all the indicators are tested with the factor loading as discriminant analysis. The result shows not all the indicator are reflected to the latent variable. Several variables that excluded from the analysis are:

Table 26. Indicator Excluded List

	Mean	Std. Deviation	Min.	Max.	Loading Factor/ Lambda (λ)	N		Decision
						Valid	Missing	
IF3	7.10	.82621	5.00	8.00	0.697	312	0	Exclusion
EA4	6.92	1.31545	2.00	8.00	0.632	312	0	Exclusion
EA6	7.04	1.14858	2.00	8.00	0.629	312	0	Exclusion

Sources: SPSS data processing, 2022.

Then from the table 26, this dissertation eliminated indicator IF3, EA4, and EA6, then re-run for the SEM second-run (run 2) analysis. The following figure is the PLS-SEM algorithm run 1.

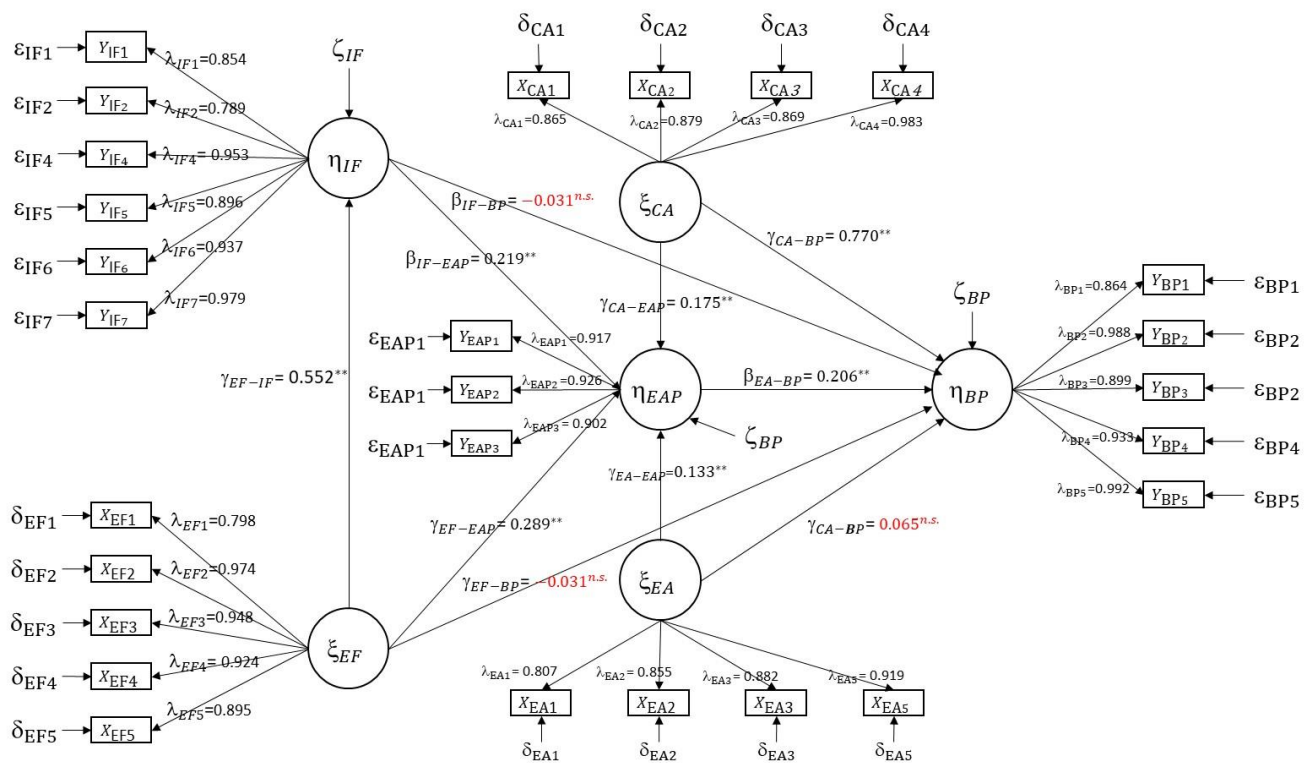


Figure 14. Structural Measurement Model Evaluation (Outer Model)

Source: Modification of SmartPLS output, 2023

Figure 14 shows that all research indicators meet the requirements for SEM analysis because of the high value of individual reflective measures. Individual reflexive measures are high if they correlate more than 0.70 with the measured construct. PLS is developed for recursive modeling, as mentioned in the Methods section. In the principle of reflective measurement, the mediation/intervention model is conceptually similar to the recursive model analysis. The only difference is the importance of the mediation effect. As a result, there is a relationship between latent variables known as the causal chain system, which takes the form of an equation. Combined the structural model equations provided in the methods section into this dissertation model then the mathematical equation derived from Figure 14 as follows:

Equations for Structural Models:

$$\eta_{IF} = \gamma \xi_{EF} + \zeta_{IF}$$

$$\eta_{EAP} = \beta_{IF-EAP} \eta_{IF} + \gamma_{EF-EAP} \xi_{EF} + \gamma_{CA-EAP} \xi_{CA} + \gamma_{EA-EAP} \xi_{EA} + \zeta_{EAP}$$

$$\eta_{BP} = \beta_{EAP-BP} \eta_{EAP} + \gamma_{CA-BP} \xi_{CA} + \gamma_{EA-BP} \xi_{EA} + \zeta_{BP}$$

Equations for exogenous variables:

<u>External Factor</u>	<u>Coastal Area</u>	<u>Economics Awareness</u>
$X_{EF1} = \lambda_{EF1} + \delta_{EF1}$	$X_{CA1} = \lambda_{CA1} + \delta_{CA1}$	$X_{EA1} = \lambda_{EA1} + \delta_{EA1}$
$X_{EF2} = \lambda_{EF2} + \delta_{EF2}$	$X_{CA2} = \lambda_{CA2} + \delta_{CA2}$	$X_{EA2} = \lambda_{EA2} + \delta_{EA2}$
$X_{EF3} = \lambda_{EF3} + \delta_{EF3}$	$X_{CA3} = \lambda_{CA3} + \delta_{CA3}$	$X_{EA3} = \lambda_{EA3} + \delta_{EA3}$
$X_{EF4} = \lambda_{EF4} + \delta_{EF4}$	$X_{CA4} = \lambda_{CA4} + \delta_{CA4}$	$X_{EA5} = \lambda_{EA5} + \delta_{EA5}$
$X_{EF5} = \lambda_{EF5} + \delta_{EF5}$		

Equations for exogenous variables:

<u>Internal Factor</u>	<u>Eco-agropreneurship</u>	<u>Business Performance</u>
$Y_{IF1} = \lambda_{IF1} + \varepsilon_{IF1}$	$Y_{EAP1} = \lambda_{EAP1} + \varepsilon_{EAP1}$	$Y_{BP1} = \lambda_{BP1} + \varepsilon_{BP1}$
$Y_{IF2} = \lambda_{IF2} + \varepsilon_{IF2}$	$Y_{EAP2} = \lambda_{EAP2} + \varepsilon_{EAP2}$	$Y_{BP2} = \lambda_{BP2} + \varepsilon_{BP2}$
$Y_{IF4} = \lambda_{IF4} + \varepsilon_{IF4}$	$Y_{EAP3} = \lambda_{EAP3} + \varepsilon_{EAP3}$	$Y_{BP3} = \lambda_{BP3} + \varepsilon_{BP3}$
$Y_{IF5} = \lambda_{IF5} + \varepsilon_{IF5}$		$Y_{BP4} = \lambda_{BP4} + \varepsilon_{BP4}$

$$Y_{IF6} = \lambda_{IF6} + \varepsilon_{IF6}$$

$$Y_{BP5} = \lambda_{BP5} + \varepsilon_{BP5}$$

$$Y_{IF7} = \lambda_{IF7} + \varepsilon_{IF7}$$

Therefore, as proposed by Wold (1963), also repeated in Chin (1998), then developed by Henseler (Henseler et al., 2009), until the recent book by Hair et al. (2021), the Evaluation of PLS Path Model Results can be asses by the outer and inner models.

4.4.1. Outer Model

There are three criteria for data analysis techniques using SmartPLS to assess the outer model: Convergent Validity, Discriminant Validity, and Composite Reliability. Convergent validity for reflexive indicators is assessed based on the correlation between item scores/component scores estimated with PLS software. Individual reflexive measures are considered high if they correlate more than 0.70 with the measured construct. However, according to Chin (1998), research in the early stages of developing a measurement scale for the loading value of 0.5 to 0.6 is considered sufficient.

4.4.1.1. Convergent Validity Test

Convergent validity aims to determine the validity of each relationship between indicators and their latent variables. The convergent validity of the measurement model with reflective indicators is assessed based on the correlation between item or component scores with latent variable or construct scores calculated by PLS Algorithm. The loading factor value above 0.7 is considered ideal and valid. However, a loading factor value equal to or above 0.5 is still acceptable. The following table is the results of the outer loading for each indicator owned by each exogenous and endogenous latent variable obtained from data processing using SmartPLS:

Table 27. Outer Loading

	EAP	BP	IF	EF	CA	EA
F_EAP1	0.917					
F_EAP2	0.926					
F_EAP3	0.902					
BP1		0.863				
BP2		0.988				
BP3		0.899				
BP4		0.933				
BP5		0.992				
IF1			0.860			
IF2			0.781			

IF4	0.955	
IF5	0.902	
IF6	0.933	
IF7	0.977	
EF1		0.803
EF2		0.973
EF3		0.947
EF4		0.923
EF5		0.893
CA1		0.865
CA2		0.879
CA3		0.869
CA4		0.983
EA1		0.809
EA2		0.860
EA3		0.878
EA5		0.916

Sources: SmartPLS 3 data processing, 2022.

Table 27 describes the value of the loading factor (convergent validity) of each indicator. The loading factor value > 0.7 is considered valid. However, it is necessary to remember that the rule of thumb interpretation of the loading factor value > 0.5 is sufficient to be valid. Table 27 shows that all the loading factor values of the IF, EF, EAP, EA, CA, and BP indicators are more significant than 0.7. This result shows that the indicators are valid.

4.4.1.2. Discriminant validity

Discriminant Validity is to prove that latent constructs predict the size of their block better than the size of the other blocks. The discriminant validity measurement model used reflective indicators is assessed based on cross-loading measurements with constructs.

After convergent validity, the following evaluation examines the discriminant validity with cross-loading, the square root of average variance extracted (AVE), and composite reliability values. Discriminant validity of the measurement model is assessed based on the measurement of cross-loading with the construct. If the correlation of the construct with the primary measurement (each indicator) is more significant than the size of the other constructs. The latent construct predicts the indicator better than the other constructs. The model has good discriminant validity if each loading value of each indicator of a latent variable has the most considerable loading value with other loading values on other latent variables. The results of the discriminant validity test as follows:

Table 28. Cross Loading

	EAP	BP	IF	EF	CA	EA
F_EAP1	0.917	0.605	0.497	0.596	0.521	0.547
F_EAP2	0.926	0.55	0.546	0.572	0.482	0.535
F_EAP3	0.902	0.505	0.451	0.507	0.420	0.435
BP1	0.558	0.863	0.486	0.496	0.768	0.429
BP2	0.590	0.988	0.45	0.547	0.858	0.443
BP3	0.517	0.899	0.344	0.447	0.760	0.384
BP4	0.570	0.933	0.502	0.634	0.843	0.530
BP5	0.604	0.992	0.476	0.575	0.873	0.466
IF1	0.406	0.417	0.860	0.411	0.392	0.424
IF2	0.488	0.306	0.781	0.443	0.385	0.565
IF4	0.483	0.463	0.955	0.488	0.453	0.544
IF5	0.457	0.459	0.902	0.486	0.439	0.496
IF6	0.560	0.468	0.933	0.581	0.494	0.653
IF7	0.548	0.488	0.977	0.558	0.512	0.619
EF1	0.531	0.576	0.483	0.803	0.636	0.566
EF2	0.585	0.510	0.502	0.973	0.551	0.692
EF3	0.520	0.495	0.52	0.947	0.522	0.656
EF4	0.539	0.519	0.504	0.923	0.533	0.639
EF5	0.603	0.524	0.497	0.893	0.526	0.699
CA1	0.553	0.813	0.479	0.549	0.865	0.388
CA2	0.437	0.776	0.355	0.476	0.879	0.356
CA3	0.388	0.717	0.472	0.575	0.869	0.479
CA4	0.482	0.842	0.479	0.595	0.983	0.437
EA1	0.389	0.344	0.600	0.483	0.299	0.809
EA2	0.528	0.49	0.576	0.673	0.488	0.860
EA3	0.489	0.399	0.491	0.642	0.381	0.878
EA5	0.502	0.419	0.472	0.659	0.398	0.916

Sources: SmartPLS 3 data processing, 2022.

Based on the table 28 about cross loading value, it can be seen that all the indicators that construct each of the variables in this study (the values in bold and the dotted line border) have met discriminant validity because they have the most significant outer loading value for the variables they form and not on to the other variables. Thus, all indicators in each variable in this study have met discriminant validity.

Besides the cross-loading, a construct is considered valid by comparing the root value of the AVE (Fornell-Larcker Criterion) with the correlation value between latent variables.

The AVE root value must be greater than the correlation between latent variables. Fornell Larcker Criterion is a traditional method that has been used for more than 30 years, which compares the square root value of the Average Variance Extracted (AVE) of the each construct and the correlations between other constructs in the model.

If the square root value of AVE for each construct is greater than the correlation value between constructs and other constructs in the model, then the model is said to have a good discriminant validity value (Fornell & Larcker, 1981). The Fornell-Larcker Criterion values based on the results of the analysis in this dissertation are as follows:

Table 29. Fornell-Larcker Criterion

	EAP	BP	IF	EF	CA	EA
EAP	0.915					
BP	0.607	0.937				
IF	0.546	0.483	0.904			
EF	0.613	0.579	0.552	0.910		
CA	0.521	0.877	0.497	0.61	0.900	
EA	0.556	0.482	0.614	0.717	0.459	0.867

Sources: SmartPLS 3 data processing, 2022.

Based on the table 29, all the AVE Square Roots (Fornell-Larcker Criterion) for each construct are more significant than their correlations with other variables. The values in bold and the dotted line border indicate the AVE root value. Likewise with other latent variables, where the AVE Square Roots > Correlation with other constructs. All latent variables have AVE Square Roots values > correlation with other constructs, the discriminant validity requirements for this model fulfilling the Fornell-Larcker Criterion, as listed in the table 23.

4.4.1.3. Reliability Test

Construct reliability is measuring the reliability of the construct latent variable. The value that is considered reliable must be above 0.70. Construct reliability is the same as Cronbach's alpha. Based on the PLS analysis, the results shown in table 30 as follows:

Table 30. Construct Validity and Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BP	0.964	0.968	0.973	0.877
CA	0.921	0.926	0.944	0.810
EA	0.889	0.900	0.923	0.751
EAP	0.904	0.910	0.939	0.838
EF	0.947	0.947	0.960	0.827
IF	0.954	0.963	0.964	0.817

Sources: SmartPLS 3 data processing, 2022.

The analytical tools used to assess whether the variables are considered reliable are Cronbach's alpha, rho_A, and composite reliability. Cronbach's alpha and rho_A values are expected to be above 0.7; a composite reliability value of 0.6 – 0.7 is considered good (Sarstedt et al., 2017; Ghozali and Latan, 2015). Based on table 24, it can be seen that all constructs have Cronbach's Alpha values > 0.6, and even all the indicators > 0.7, it concluded that all of these constructs are reliable.

The following analysis is that convergent validity is determined based on the principle that the construct measurement should be highly correlated (Davis, 1989; Ghozali, 2008; Moore & Benbasat, 1991). The convergent validity of a construct that use reflective indicators is evaluated by Average Variance Extracted (AVE). The AVE value should be 0.5 or more. An AVE value of 0.5 or more means that the construct can explain 50% or more of the item variance (Wong K.K., 2013, Sarstedt et al., 2017). Based on the analysis results in table 24, the AVE value > 0.5 means that all constructs have met the convergent validity requirements; thus, all indicators are valid.

4.4.2. Inner Model

The inner model is also known as a structural model. The structural model is a model to connect the latent variables. However, the PLS Algorithm is limited to the estimated coefficient values. Meanwhile, the level of statistical significant must be tested using bootstrapping analysis. The following figure is the result of bootstrapping analysis:

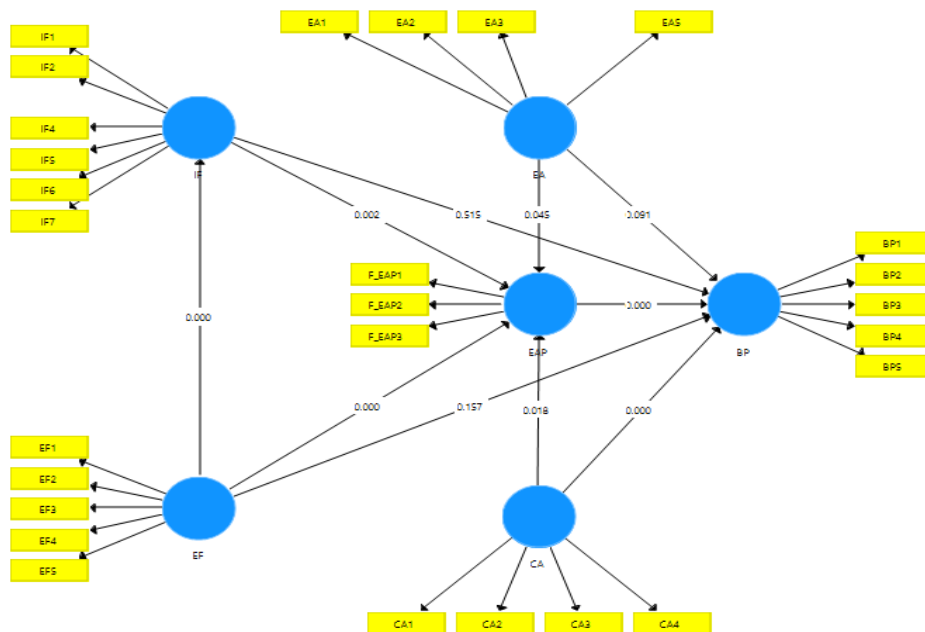


Figure 15. Structural Model (Inner Model)

From the figure 15, it can be concluded that there is no significant direct effect between the latent variables of IF on BP, EF on BP, and EA on BP, because all of the effects have p-value more than 0.05. Thus, the connection between these variables must be dropped for the suitability of the GoF of the model analysis.

After the outer model analysis has been fulfilled, where all indicators are valid and reliable as a reflection of the latent variable, the following analysis to fulfill the GoF test is the inner model to analyze the relationship between the significant value constructs by calculating direct, indirect, and total effects; the coefficient of determination R^2 ; Effect Size F^2 ; and Predictive Relevance Q^2 . Hypothesis using a t-test and the significance of the coefficients of the structural path parameters. Measurement of the structural model can be seen in the following subsections:

4.4.2.1. Inner Model Assumption

This dissertation uses the VIF value and the correlation value between constructs to fulfill the inner model assumption. The following table 31 is the VIF of inner model.

Table 31. VIF Inner Model Value

	EAP	BP	IF	EF	CA	EA
EAP		1.373				
BP						
IF	1.785					
EF	2.600		1.000			
CA	1.693	1.373				
EA	2.404					

Sources: SmartPLS 3 data processing, 2022.

Based on the VIF value in table 31, there is no VIF value > 5 . Thus, there is no multicollinearity problem. This fact is supported by the absence of a strong correlation between independent variables as shown in the table 32:

Table 32. Latent Variable Correlation

	EAP	BP	IF	EF	CA	EA
EAP	1	0.607	0.548	0.612	0.521	0.556
BP	0.607	1	0.482	0.577	0.877	0.481
IF	0.548	0.482	1	0.552	0.497	0.615
EF	0.612	0.577	0.552	1	0.608	0.717
CA	0.521	0.877	0.497	0.608	1	0.458
EA	0.556	0.481	0.615	0.717	0.458	1

Sources: SmartPLS 3 data processing, 2022.

4.4.2.2. Direct, Indirect, and Total Effects

In the PLS-SEM analysis, the value of this direct effect is also called the path coefficient. Furthermore, the measurement of path coefficients between constructs is carried out to determine the relationships of significance and strength also to test the hypothesis. The path coefficient values range from -1 to +1. The value of path coefficients is getting closer to the value of +1 means the relationship between the two constructs is getting stronger. The relationship that is closer to -1 indicates that the relationship is negative (Sarstedt et al., 2017). The following is the path coefficient or direct effects:

Table 33. Direct Effect

	EAP	BP	IF	EF	CA	EA
EAP		0.206				
BP						
IF	0.219					
EF	0.289		0.552			
CA	0.175	0.770				
EA	0.133					

Sources: SmartPLS 3 data processing, 2022.

Based on the results of the direct effects inner model analysis in table 33, it can be interpreted as follows:

- The direct effect of EAP on BP is 0.206, which means that if EAP increases by one unit or one scale, BP will increase by 20.6%. This influence is positive.
- The direct effect of IF on EAP is 0.219, which means that if IF increases by one unit or one scale, EAP will increase by 21.9%. This influence is positive.
- The direct effect of EF on EAP is 0.289, which means that if EF increases by one unit or one scale, EAP will increase by 28.9%. This influence is positive.
- The direct effect of EF on IF is 0.552, which means that if EF increases by one unit or one scale, IF will increase by 55.2%. This influence is positive.
- The direct effect of CA on EAP is 0.175, which means that if CA increases by one unit or one scale, EAP will increase by 17.5%. This influence is positive.
- The direct effect of CA on BP is 0.770, which means that if CA increases by one unit or one scale, BP will increase by 77.0%. This influence is positive.
- The direct effect of EA on EAP is 0.133, which means that if EA increases by one unit or one scale, EAP will increase by 13.3%. This influence is positive.

Subsequently, the following are the results of the indirect effects analysis in this PLS SEM inner model:

Table 34. Indirect Effect

	EAP	BP	IF	EF	CA	EA
BP						
CA		0.036				
EA		0.027				
EAP						
EF	0.121	0.084				
IF		0.045				

Sources: SmartPLS 3 data processing, 2022.

Based on the indirect effects table in table 34, it can be concluded that:

- The indirect effect of CA on BP through EAP is 0.036, which means that if CA increases by one unit or scale, then BP will increase indirectly through EAP by 3.6%. This influence is positive.
- The indirect effect of EA on BP through EAP is 0.027, which means that if EA increases by one unit or scale, then BP will increase indirectly through EAP by 2.7%. This influence is positive.
- The indirect effect of EF on EAP through IF is 0.121, which means that if EF increases by one unit or scale, then EAP will increase indirectly through IF by 12.1%. This influence is positive.
- The indirect effect of EF on BP through EAP is 0.084, which means that if EF increases by one unit or scale, then BP will increase indirectly through EAP by 8.4%. This influence is positive.
- The indirect effect of IF on BP through EAP is 0.045, which means that if IF increases by one unit or scale, then BP will increase indirectly through EAP by 4.5%. This influence is positive.

Path coefficient analysis is the result of total effects analysis showed by table 35 as follows:

Table 35. Total Effect

	EAP	BP	IF	EF	CA	EA
EAP		0.206				
BP						

	EAP	BP	IF	EF	CA	EA
IF	0.219	0.045				
EF	0.410	0.084	0.552			
CA	0.175	0.806				
EA	0.133	0.027				

Sources: SmartPLS 3 data processing, 2022.

As previously explained, the total effect is the sum of the direct and indirect effects. Since the total effect of IF on EAP, EF on IF, CA on EAP, EA on EAP and EAP on BP, there is no intermediate variable, and the total effect value is automatically the same as the direct effect. The interpretation of the total effect is as follows:

- The total effect of IF on BP is 0.045, which means that if IF increases by one unit or one scale, then BP will increase directly and indirectly through EAP by 4.5 %. This influence is positive.
- The total effect of EF on EAP is 0.410, which means that if EF increases by one unit or one scale, then EAP will increase directly and indirectly through IF by 41.0 %. This influence is positive.
- The total effect of EF on BP is 0.084, which means that if EF increases by one unit or one scale, then BP will increase directly and indirectly through EAP by 8.4%. This influence is positive.
- The total effect of CA on BP is 0.806, which means that if CA increases by one unit or one scale, then BP will increase directly and indirectly through EAP by 80.6%. This influence is positive.
- The total effect of EA on BP is 0.027, which means that if EA increases by one unit or one scale, then BP will increase directly and indirectly through EAP by 2.7%. This influence is positive.

4.4.2.3. Coefficient Determination R²

R square is a value that shows how much the independent variable (exogenous) affects the dependent variable (endogenous). R² is a number that ranges from 0 to 1, indicating the importance of the combination of independent variables that affect the value of the dependent variable. The value of R² is used to assess how much influence certain independent latent variables have on the latent dependent variable. Several studies have concluded the category of R² values. In this dissertation uses the following categories:

- R² value > 0.7 is categorized as strong

- R^2 value of 0.67 is categorized as substantial
- R^2 value of 0.33 is categorized as moderate
- R^2 value of 0.19 is categorized as weak

R squared can not only be used in regression but it can be used in all models to determine whether the model is good or not.

Based on the results of the PLS algorithm analysis, the value of R^2 is shown in Table 36:

Table 36. Coefficient Determination R^2

	R Square	R Square Adjusted	Description
BP	0.801	0.800	Strong
EAP	0.462	0.455	Moderate
IF	0.305	0.303	Weak

Sources: SmartPLS 3 data processing, 2022.

R^2 is coefficient of determination which explains how far independent data can explain the dependent data. R^2 has a value between 0 - 1 with the provision that the closer to the number one, the better.

The adjusted R^2 value serves to overcome the problem that is often encountered in the R^2 value, which is that the value continues to increase if there are additional independent variables into the model. The adjusted R^2 can measure the confidence level of adding independent variables appropriately in increasing the model's predictive power.

The result based on the PLS algorithm analysis in table 36 is interpreted as follows:

- The value of R^2 BP = 0.801, meaning that EAP and CA can explain 80.1% of the distribution of the BP variable. The adjusted R^2 value on the BP variable is 0.800, which means that the BP variable is influenced 80.0 % by the EAP and CA variable. This coefficient of determination is categorized as a strong relationship.
- The value of R^2 EAP = 0.462, meaning that 46.2% of the distribution of the EAP variable can be explained by the IF, EF, CA, and EA variables. The adjusted R^2 value for the EAP variable is 0.455. It is considered that the EAP variable is influenced by 45.5% by the IF, EF, CA, and EA variables. This coefficient of determination is categorized as a moderate relationship.

The value of R^2 IF = 0.305, meaning that 30.5% of the distribution of the IF variable can be explained by the EF variable. The adjusted R^2 value for the IF variable is 0.303, which means that the IF variable is influenced by 30.3% by the EF variable. This coefficient of determination is categorized as a weak relationship.

4.4.2.4. Effect Size F^2

Besides assessing the relationship between variables, this dissertation also assesses the importance of the influence between variables with Effect Size or F^2 (W. W. Chin, 1998; Henseler et al., 2009). The criteria for Effect Size F^2 are as follows:

- 0.02, small effects
- 0.15, moderate effects
- 0.35, large effects

Based on the analysis using SmartPLS, the F^2 value is shown in table 37:

Table 37. Effect Size F^2

	EAP	BP	IF	EF	CA	EA
EAP		0.155				
BP						
IF	0.050					
EF	0.060		0.439			
CA	0.034	2.170				
EA	0.014					

Sources: SmartPLS 3 data processing, 2022.

Based on table 37, it can be interpreted as follows:

- The large effect with F^2 criteria > 0.35 is the effect of CA on BP and EF on IF, both directly or indirectly.
- Medium effect with F^2 between 0.15 - 0.35 is the effect of EAP on BP, both directly or indirectly.
- Small effect with F^2 between 0.02 – 0.14 is the effect of IF on EAP, EF on EAP, and CA on EAP, both directly or indirectly.
- While the effect that is ignored because it has a value of $F^2 < 0.02$ is the effect of EA on EAP.

4.4.2.5. Predictive Relevance Q^2 Size Effects (q^2)

Predictive relevance is a test to show how good the observed value by using the blindfolding procedure. The following is the calculation value of Q^2 by smartPLS.

Table 38. Predictive Relevance (Q^2)

	SSO	SSE	$Q^2 (=1-SSE/SSO)$
BP	1560	479.782	0.692

CA	1248	1248	
EA	1248	1248	
EAP	936	580.619	0.380
EF	1560	1560	
IF	1872	1419.773	0.242

Sources: SmartPLS 3 data processing, 2022.

Based on table 38, all the Q^2 values are more than 0 means that the observed values have been accurately reconstructed. Thus, the model has predictive relevance. Subsequently, from the table 38, it can be seen that there are three values of determination that need to be seen for their effect size as a comparison of the value of R^2 and F^2 . However, at the beginning of the inner model analysis, it was found that the only latent variables that had a significant relationship with BP were EAP and CA. In reconstructing the model's structure, there should not only be two latent variables that affect the other dependent latent variables. Thus, these results show that the reconstruction of the factor influence model on BP in this dissertation only has an indirect effect from IF, EF, and EA, while the direct effects are EAP and CA. Therefore, the value of q^2 that can be calculated through the blindfolding process is only the latent variable EAP. The following table is the calculation of q^2 :

Table 39. Q^2 size effect (q^2)

	Q^2 Included	Q^2 Excluded	q^2	Description
EF	0.380	0.353	0.044	Small
IF	0.380	0.359	0.034	Small
EA	0.380	0.375	0.008	No effects
CA	0.380	0.365	0.024	Small

Sources: Excel data processing, 2022.

Table 39 is quite similar to the interpretation of F^2 . Thus, if one of the latent variables that affect the latent variable EAP is removed, the effect is small. Meanwhile, the latent variable EA has no effect.

4.4.2.6. Goodness of Fit of the Model

As mentioned in Chapter III, the assessment of the Goodness of Fit Model in the PLS-SEM analysis is based only on the fittingness of the outer and inner models. The outer model is evaluated in this dissertation using reflective measurements. Based on the previous subsection, it can be concluded that the model in this dissertation has met the goodness of

fit criteria. However, the results of the PLS still provide an assessment of the fit model. The following is the assessment of the fit model based on the calculation of the smartPLS software:

Table 40. Model Fit

	Saturated Model	Estimated Model
SRMR	0.069	0.093
d_ULS	1.82	3.273
d_G	3.965	4.208
Chi-Square	4594.662	4740.839
NFI	0.687	0.677
rms Theta	0.229	

Sources: SmartPLS 3 data processing, 2022.

Based on the results of table 40 of the fit model above, the results of this dissertation research meet the criteria for measuring the fit model, one of which is the SRMR measurement. Standardized square root mean residual (SRMR) is a standard measure based on the transformation of sample covariance matrix and predicted covariance matrix into a correlation matrix. Meanwhile, this dissertation is structural modeling based on partial least squares, not covariance-based. Previous research also explains that the measurement of the fit model offered by SmartPLS application can only be used in MGA (Hair et al., 2019; Henseler et al., 2009; Ringle et al., 2015). Therefore, this dissertation suggests a more explicit calculation of GoF by using the global fit model purposed by Tenenhaus (2000):

$$GoF = \sqrt{\overline{com} \times \overline{R^2}}$$

The robustness of this research formula is the combination of the outer model calculation of communality by communality and inner model R^2 (Nagy et al., 2022). The following is the result of the GoF calculation:

Table 41. Global Fit Pls Path Model

	R²	Communality
BP	0.801	0.803
EAP	0.462	0.634
IF	0.305	0.743
Sum.	1.568	2.18

Av.	0.52266667	0.72666667
GoF		0.61628276

Sources: Excel data processing, 2022.

The greater the GoF value, the more appropriate the model description. The categories of GoF values are categorized into three as follows:

- 0.1 (weak),
- 0.25 (moderate),
- 0.36 (large).

Based on the table GoF above, the GoF value shows 0.616 means that the model is categorized as a large model prediction. This result shows that the measurement model (outer model) and the structural model (inner model) are feasible or valid.

4.4.2.7. Hypothesis Test

Testing the hypothesis in this dissertation is done by basic bootstrapping to determine the significance of each construct latent variable's direct, indirect, and total effects. Based on the results of the SmartPLS calculation, the results of the significance of the test are as follows:

Table 42. Significant Test

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Direct Effects					
CA -> BP	0.770	0.765	0.045	17.171	0.000
CA -> EAP	0.175	0.184	0.073	2.394	0.017
EA -> EAP	0.133	0.137	0.066	2.034	0.042
EAP -> BP	0.206	0.21	0.043	4.74	0.000
EF -> EAP	0.289	0.279	0.073	3.95	0.000
EF -> IF	0.552	0.557	0.047	11.786	0.000
IF -> EAP	0.219	0.217	0.064	3.401	0.001
Indirect Effects					
CA -> BP	0.036	0.04	0.02	1.771	0.077
EA -> BP	0.027	0.029	0.015	1.797	0.073
EF -> BP	0.084	0.083	0.022	3.815	0.000
EF -> EAP	0.121	0.121	0.039	3.074	0.002
IF -> BP	0.045	0.045	0.016	2.821	0.005
Total Effects					
CA -> BP	0.806	0.805	0.032	25.215	0.000

EA -> BP	0.027	0.029	0.015	1.797	0.073
EF -> BP	0.084	0.083	0.022	3.815	0.000
EF -> EAP	0.410	0.400	0.080	5.099	0.000
IF -> BP	0.045	0.045	0.016	2.821	0.005

Sources: SmartPLS 3 data processing, 2022.

Table 42 shows the direct, indirect, and total effects of each influence constructed by the model. All the path coefficient has been explained before at the beginning of the inner model's subsection. Table 42 also confirms the statistical significance among those effects by comparing the t-value/statistics and t-table using a two-tailed 0.05 level of significance or 95% confidence level. Since this dissertation has an observation number is 312 (n) respondents, the formula for degree of freedom is $df = n - k$, which means that for each simultaneous effect, it needs to decrease the n based on the independent variable (k). Thus, this dissertation uses $df=100$; two-tails 0.05; t-table is 1.984. The interpretation is based on the comprehension that if the t-value > the t-table, the p-value will be lower than 0.05. This means that the effect is statistically significant. The following is the in the interpretation of the data analysis in table 42:

Direct Effects.

- The influence of CA on BP is 77.0 %, with a t-value of 17.171 > t-table 1.984, p-value less than 0.05, meaning that CA has direct significant effects on BP.
- The influence of CA on EAP is 17.5 %, with a t-value of 2.394 > t-table 1.984, p-value of 0.017 less than 0.05, meaning that CA has direct significant effects on EAP.
- The influence of EA on EAP is 13.3 %, with a t-value of 2.034 > t-table 1.984, p-value of 0.042 less than 0.05, meaning that EA has direct significant effects on EAP.
- The influence of EAP on BP is 20.6 %, with a t-value of 4.740 > t-table 1.984, p-value less than 0.05, meaning that EAP has direct significant effects on BP.
- The influence of EF on EAP is 28.9 %, with a t-value of 3.950 > t-table 1.984, p-value less than 0.05, meaning that EF has direct significant effects on EAP.
- The influence of EF on IF is 55.2 %, with a t-value of 11.786 > t-table 1.984, p-value less than 0.05, meaning that EF has direct significant effects on IF.
- The influence of IF on EAP is 21.9 %, with a t-value of 3.401 > t-table 1.984, p-value of 0.001 less than 0.05, meaning that IF has direct significant effects on EAP.

Indirect Effect

- The influence of CA on BP through EAP is 3.6 %, with a t-value of 1.771 < t-table 1.984, p-value of 0.077 bigger than 0.05, meaning that CA does not have indirect significant effects through EAP on BP.
- The influence of EA on BP through EAP is 2.7 %, with a t-value of 1.797 < t-table 1.984, p-value of 0.073 bigger than 0.05, meaning that EA does not have indirect significant effects through EAP on BP.
- The influence of EF on BP through EAP is 8.4 %, with a t-value of 3.815 > t-table 1.984, p-value less than 0.05, meaning that EF has indirect significant effects through EAP on BP.
- The influence of EF on EAP through IF is 12.1 %, with a t-value of 3.074 > t-table 1.984, p-value of 0.002 less than 0.05, meaning that EF has indirect significant effects through IF on EAP.
- The influence of IF on BP through EAP is 4.5 %, with a t-value of 2.821 > t-table 1.984, p-value of 0.005 less than 0.05, meaning that IF has indirect significant effects through EAP on BP.

Total Effects

- The influence of CA on BP through EAP is 80.6 %, with a t-value of 25.215 > t-table 1.984, p-value less than 0.05, meaning that CA has direct and indirect significant effects through EAP on BP.
- The influence of EA on BP through EAP is 2.7 %, with a t-value of 1.797 < t-table 1.984, p-value of 0.073 bigger than 0.05, meaning that EA does not have direct and indirect significant effects through EAP on BP.
- The influence of EF on BP through EAP is 8.4 %, with a t-value of 3.815 > t-table 1.984, p-value less than 0.05, meaning that EF has direct and indirect significant effects through EAP on BP.
- The influence of EF on EAP through IF is 41.0 %, with a t-value of 5.099 > t-table 1.984, p-value less than 0.05, meaning that EF has direct and indirect significant effects through IF on EAP.
- The influence of IF on BP through EAP is 4.5 %, with a t-value of 2.821 > t-table 1.984, p-value of 0.005 less than 0.05, meaning that IF has direct and indirect significant effects through EAP on BP.

This dissertation provides a statistical summary table to describe all of the statistical meanings to support the hypothesis as follows:

Table 42. Statistical Summary

Hypothesis			Path Coefficient	T-Value	P-Values (sig.)	Decision	F ²	q ²
H ₁ :	EF	→ IF	0.552	11.786	0.000	Accepted	0.439	
	IF	→ EAP	0.219	3.401	0.001	Accepted	0.050	0.003
	EF	→ EAP	0.289	3.95	0.000	Accepted	0.060	0.003
H ₂ :	EAP	→ BP	0.206	4.74	0.000	Accepted	0.155	0.075
H ₃ :	CA	→ EAP	0.175	2.394	0.017	Accepted	0.034	1.010
	EA	→ EAP	0.133	2.034	0.042	Accepted	0.014	0.007
H ₄ :	CA	→ BP	0.770	17.171	0.000	Accepted	2.170	
	EA	→ BP	0.065	1.696	0.091	Rejected	0.009	
H ₅ :	IF	→ BP	-0.031	0.651	0.515	Rejected	0.003	
	EF	→ BP	-0.066	1.418	0.157	Rejected	0.008	
R ²	Coefficient Determination			0.801				
Q ²	Predictive Relevance			0.694				
GoF	Global fit PLS path model			0.616				

Sources: Excel data processing, 2023

4.5. Discussion

Hypothesis 1

The influence of external factors on internal factors is proven significant. This conclusion is based on the data analysis results showing the influence of external variables on internal variables of 55.2% with a significance value or p-value less than 0.05. These results mean that this dissertation accepts hypothesis 3, that there is a significant influence between external and internal variables. This result supported the previous result by Menguc et al. (2010) found that external factors affected internal factors. The influence of external factors is confirmed by the statistical meaning of the value of f^2 , which shows a large effect on internal factors. The results of this dissertation also mean that the external environmental factors of SMEs, such as government assistance and the influence of consumers, competitors, and suppliers, have been appropriately utilized by the owners/managers of MSMEs in managing and running the business (Carey, 2015; Pedersen & Sudzina, 2012; Tumiwa et al., 2020). These results can be used as a benchmark that good external environmental factors will have a positive effect on internal environmental factors in developing MSMEs, and the results will also have an impact on increasing the eco-agropreneurship variable and subsequently on business performance. This result shows a relationship between external and internal environmental factors that are interconnected and

influence each other (Blanco-González et al., 2021; Dess & Robinson, 1984; Prashar, 2019; Udiyana et al., 2018), which positive external environmental factors will affect internal environmental factors and result in good business performance through the concept of eco-agripreneurship. This dissertation found that the dimensions of government assistance and policy are factors of the external environment variables in this study to influence the internal environment. This result can be seen from the descriptive statistics, which show the average dimensions in the high mean value category. Thus, it can be concluded that the dimensions of the legal framework and government regulations that support MSMEs are excellent.

Based on the results of the bootstrapping analysis, it can be concluded that the influence of internal factors on the eco-agropreneurship of 21.9% has a statistically significant value. The values of F^2 and q^2 also support the value of this significant effect. This result means that the eco-agropreneurship variable depends on the internal factors of MSMEs. The reflective measurement of the latent internal factor variable is based on the human resource aspect, which is mostly influenced by working hours (Kindangen et al., 2019). Based on the research team's experience, working hours such as consistency of business opening hours, length of business opening days, and commitment to working hours are considered a factor affecting eco-agropreneurship. Competitive pricing strategy is the dominant factor as a reflective variable latent internal factor by highest mean value (Gunarathne & Lee, 2021; Schaltegger, 2002). However, in this dissertation, the direct influence of internal factors on business performance is not significant. The indirect effect through the eco-agropreneurship variable of 4.5 proved significant. This study's results align with the research conducted by Strydom et al. (2021) that stated that internal factor are the main important element of entrepreneurial of eco-agropreneur intentions (Gunawan et al., 2021; Masjud, 2020; Piwowar-Sulej et al., 2021; Schaper, 2002).

Based on the results of this dissertation data analysis, it supports hypothesis 5 that external factors significantly influence eco-agropreneurship 28.9%. That is, the better the external environmental factors, the better the eco-agropreneurship. The results of this study support previous studies (Ben Amara et al., 2020; Piwowar-Sulej et al., 2021; Smallbone & Welter, 2001; Udiyana et al., 2018). In this dissertation, the dominant indicator is measured based on the highest mean value, not weight, because the outer model is based on reflective measurements. Thus, this statistical significance result is in line with the descriptive analysis of variables where infrastructure support from the government has the largest mean value. It assumed that infrastructure support from the government, such as the availability of roads, market access, and waste management, will increase the perception of MSME's eco-

agropreneurship in coastal areas (Doh & Kim, 2014; Lamoureux et al., 2019; Smallbone & Welter, 2001). Another statistical significance is the value of F^2 , which means that the external factor has a relationship of determination to EAP, and although it is small, this relationship cannot be ignored. The results of external factor significance on eco-agropreneurship can be proven by the value of q^2 , that if the external factor variable is removed from the model, there will be an effect on the calculation model. This dissertation result cause by the Indonesian Government support during the economic crisis. Apart from supporting tangible infrastructure, the Government continues to support entrepreneurship through expanding access to finance (Pu et al., 2021; Razumovskaia et al., 2020; S. S. Wang et al., 2021). One of the concrete steps that have been taken is to embrace entrepreneurs from the academic community of universities, such as access to affordable financing, especially for students (Amalia & von Korflesch, 2021; Hermanto & Suryanto, 2017).

Based on interview with open-ended question, according to the respondent they are receiving direct fund and credit restructuring especially during the pandemic. Indonesian Government start to increase government spending to compensate the business impacted by COVID-19 such as support for the health sector, monthly medical personnel incentives, social protection, reducing electricity rates, increasing the pre-work card budget, economic recovery, anticipating the state budget deficit, reducing micro-credit installments, non-fiscal sectors, refocusing and relocation of expenditures, preparing laws and regulations to accelerate fiscal and non-fiscal policies, are proven adequate. The Government's decision to allocate a large budget for the Covid-19 outbreak and R-YouC is relatively similar to developed countries. Specifically, the budget allocated for the Covid-19 pandemic and affected sectors is quite large. President Joko Widodo issued a Government Regulation to increase the spending allocation in the 2020 state budget. This regulation was issued on March 31, 2020. The Government is projecting an increase in budget financing to 852.9 Trillion IDR due to the impact of the Covid-19 pandemic. This amount has increased by 547 trillion IDR from the 2020 original state budget. The state budget deficit grew to 5.07% of GDP. Investment financing also increases, from minus 74.2 trillion to minus 229.3 trillion (Hidayatullah et al., 2020; Munandar, 2020; Olivia et al., 2020; Pratama et al., 2021; S. G. Purnama & Susanna, 2020).

The Government has launched three fiscal incentives as follows:

1. In February, the Government provided a stimulus of 8.5 trillion IDR to strengthen the domestic economy through on tourism sector.

2. In mid-March, the Government then launched a further stimulus worth 22.5 trillion IDR. This stimulus is in the form of fiscal and non-fiscal policies to support the industrial sector and facilitate export-import.
3. At the end of March, Government imposed LSSR to deal with the spread of the virus. A stimulus of Rp. 405.1 trillion was also issued to accompany the health policy. The funds will be allocated for several government spending activities related to pandemic management, such as follows:
 - 150 trillion IDR to support national economic recovery programs such as credit restructuring and guarantees as well as financing for micro, small, and medium-sized enterprises (MSMEs) and other business activity.
 - 75 trillion IDR for the health sector, including protection for medical workers, purchasing medical devices, repairing health facilities, and incentives for doctors and nurses, and additional medical volunteer workers.
 - 110 trillion IDR for a social safety net, to increase the benefits of social assistance, exemption from electricity costs, and support for basic necessities.
 - 70.1 trillion IDR for reduced income tax rates and postponement of micro-credit payments.

Hypothesis 2

This dissertation accepts hypothesis 6 with the question of a significant effect between the latent variable eco-agropreneurship of 20.6% on business performance. The significant results meaning also supported by the F^2 value, which states that eco-agropreneurship has a medium F^2 size effect on the performance of MSMEs. In addition, when referring to the Q^2 value of the eco-agro-agriculture variable, 0.380 is greater than 0, which means that the eco-agropreneur measurement model is well structured and significantly influences business performance. Previous research on the application of green entrepreneurship, ecopreneurship, agropreneurship, and various other sustainability issues found that this concept is still limited to big business (Achda, 2006; Awawdeh et al., n.d.; Corazza, 2018; Hosoda, 2018; Legendre & Coderre, 2013; Scagnelli et al., 2013; Van Tulder & Da Rosa, 2014). Palmås & Lindberg (2013) found that the overly advanced and complicated ecopreneur concept has no benefit to MSMEs in generating profits. Many measurement indicators in eco-agropreneurship are the combined definition of ecopreneurship and agropreneurship that, according to the previous research finding only based on a literature review (Ben Amara & Chen, 2021; Kirkwood & Walton, 2010a; Kummitha, 2021; Phillips, 2013; Strydom et al., 2021), have found that eco-agropreneurship does not have significant

impact on business performance, especially profit generation. The results of this dissertation prove that eco-agropreneurship can be applied at the MSME level and produce promising business performance. The significant effect of eco-agropreneurship on business performance is assessed from the social and environmental impacts and the economic impact, which is profit. Most respondents answered that environmental issues were limited to waste processing and information technology, such as online marketing, delivery, and online payments, which are essential indicators at the level of micro business. Meanwhile, the other eco-agropreneurship indicators, such as the company's image, green environmental certification, participation in social activities, business ethics, and production impact, still have a low mean value compared to other measurement indicators (Guan et al., 2020). This result is slightly different with the research by López-Pérez et al (2017) and Bartolacci et al. (2020). The measurement of these low mean category indicators at the MSMEs level is in line with the Palmås & Lindberg (2013) research, which found that this element did not affect business, especially in agricultural businesses in rural areas.

The dimensions of energy consumption savings also support this significant effect. This result is in line with previous research regarding businesses that implement green process innovation through efforts to save electricity and use energy will experience a reduction in production costs. The decrease in production costs resulted in reduced operating expenses and then increased the business's profit, and the company's performance also increased.

Hypothesis 3

Based on the table 36, coastal area has significant positive effect on eco-agropreneurship. Thus, Hypothesis 7 is accepted. The value of the direct influence of the coastal area on eco-agropreneurship is 17.5%, while the total effect of the coastal area on MSMEs' performance is 80.6%. This result is evidence of the importance of local knowledge/local wisdom of coastal area to the eco-agropreneurship model. The forms of local wisdom in society can be in the form of culture (values, norms, ethics, beliefs, customs, customary laws, and special rules). Noble values related to local wisdom include love for God, the universe and its scopes, responsibility, discipline, and independence, honesty, respect and courtesy, compassion and care, confidence, creativity, hard work, and never giving up, justice and leadership, kindness and humility, tolerance, love of peace, and unity (Pesurnay, 2018; Syahza et al., 2020; Zulfadrim et al., 2018). This norm and value are the essential input of the eco-agropreneurship. However, the value of local wisdom/knowledge should be separated from eco-agropreneurship and external factors since it is different in each region, and this latent variable is to measure the respondent's perception of their local knowledge,

not the pressure from society as an external factor should. These reflective variables contain a large amount of empirical data related to the phenomena, processes, and history of environmental change, which implies that traditional knowledge systems can provide useful information for planning and development processes. Traditional beliefs are seen as local cultural wisdom (indigenous knowledge) and are sources of empirical information and important knowledge that can be improved to complement and enrich the overall scientific understanding.

Several previous studies have found that local wisdom is an entrepreneur's tool to pay attention to the environment (K. M. Adams & Sandarupa, 2018; Idris & Hijrah Hati, 2013). Based on the questionnaire indicator item manifest variable CA1 as the highest mean value, it indicates that local culture is closely related to entrepreneurship goals which are not only profit-oriented but based on existing norms and rules. Another open question about the coastal area of Minapolitan agribusiness is the need for business development based on group empowerment (Widjanarko et al., 2021). This reason is that coastal areas are significantly related to eco-agropreneurship. Therefore, this open question also needs to be seen as the statistical relationship to external factors. Based on previous research, coastal areas function for the conservation and preservation of natural resources and to develop human resources (Harahab et al., 2021; Kissiya & Biczó, 2022; Londa & Pangemanan, 2021; Steyaert et al., 2007; Syahza et al., 2020; Touwe, 2020). Thus, it can be concluded that the value of local wisdom in using natural resources is one of the assets that can be used as a regional characteristic or a particular place and needs to be preserved as a value that must be owned as an eco-agropreneurship.

The direct effect of the current economic situation awareness variable has a significant effect of 13.3 % on the eco-agropreneurship variable. Based on the data analysis results, this dissertation accepts hypothesis 5, where the direct influence of the latent variable economics situation awareness has a positive and significant influence on eco-agropreneurship. This significant relationship is supported by entrepreneurs who must be determined to survive to meet their family needs and help others in difficult times. With this determination, entrepreneurs think more about being able to innovate and be creative in selling their products (Hansen et al., 2012; Schumpeter & Clemence, 2017). The condition of the community's movement was reduced during the LSSR periods and increased online transactions used by entrepreneurs to change conventional business processes into digital or online sales through e-commerce and social media. The difficult economic conditions make people pull their brains to get income for daily meals and survive (Akpan et al., 2020;

Fitriasari, 2020; Rodrigues et al., 2021). With awareness of the current economic situation, entrepreneurs adapt their business to innovative products; for example, those who previously sold bags and clothes then changed their products to selling cloth masks. Other industries that can survive in coastal area during the COVID-19 pandemic are those related to fulfilling basic needs, including clean water, agriculture, animal husbandry, plantations, fisheries, automotive/workshop, and banking.

Hypothesis 4

The direct and total effect of the coastal area variable on the performance of MSMEs has a positive effect. This result is in line with previous research that coastal areas in rural areas have good natural resources to meet the needs of local communities (Hermawan, 2018; Marean, 2014; Sui et al., 2020). The living needs of local communities are still primary and secondary, making their fulfillment simple. Although meeting the needs of local communities is not complex, the innovation factor is essential, especially innovation that is environmentally friendly and pays attention to social aspects (Bott et al., 2020; Cahaya, 2015). Although the indirect effect of the coastal area on performance has no statistical significance, the total effect of the coastal area variable on the performance of MSMEs is significantly positive (compared with the effect of the latent variable EA). This result is in line with the findings of (Brundin & Gustafsson, 2013; Palmås & Lindberg, 2013), which prove that too much eco-innovation in rural agriculture would have no effect on business performance or profit compared then the livelihoods-based initiative. The livelihoods-based initiative in this dissertation is described in other latent variables, such as coastal area variables, which are proven to have a significant direct effect.

This dissertation found that the coastal area, which is reflective of the indicator of knowledge of local wisdom, is a cultural identity or personality that absorbs and even cultivates culture from outside/other regions into their character and abilities (Muharom Albantani & Madkur, 2018). The identity and personality would adjust to the surrounding community's views, that there is no shift in previous traditional values. Local wisdom is one norm of cultivating culture and defending oneself from foreign cultures that are not good, especially the capitalist concept, by utilizing excessive natural resources without any effort to preserve them.

In addition to local wisdom, there are other reflective indicators according to open-ended questions regarding using local resources with the smart village concept (Tumiwa et al., 2022). This concept is the development of agriculture specifically for the fisheries sector. The concept offered is using the "minapolitan" agribusiness concept. Minapolitan is a

Fisheries City, meaning that fisheries-based coastal areas are developed by providing urban infrastructure. Not to urbanize coastal areas, but activities in coastal areas and to develop the fisheries sector need to be supplied with urban infrastructure (Paruntu et al., 2019). In other words, it is an area with a functional system of villages on the coast, with a growth center village hierarchy with surrounding villages (hinterland). This concept needs an urban infrastructure, such as road networks, financial institutions, markets, offices, extension and technology transfer institutions, and educational and research institutions on the sidelines of a stretch of fishery land. There should be clean water facilities, fisheries institutional offices, health institutions, and social and public facilities (Erwin et al., 2018; Hidayati et al., 2020; Londa & Pangemanan, 2021).

Slightly different from the pattern of relationships between CA, EAP, and BP variables, the variable economic awareness (EA) does not have a direct, statistically significant effect on MSMEs performance. However, the reflective indicators of this variable are mostly positive things caused by awareness of the current economic situation. The indicator for measuring the reflective variable of latent current economic situation awareness after the indicator with a low loading factor is dropped only leaves a positive reflective indicator on how this economic situation can cause entrepreneurs to be more aware and care about others.

This reflective indicator is based on suppressing the impact of COVID-19 and the R-youC. Thus, this insignificant relationship can be explained by the approach to economic growth in rural areas. Economic growth in rural areas, especially in eastern Indonesia, is not based on investment or saving patterns but is based on consumptive patterns (Kindangen & Tumiwa, 2017). In the early 60s, Indonesian economic growth were increase stronger due to the investment and fiscal policy (Sundrum, 1986). However, in coastal area, people fulfill their need from local resources, less investment, and high household consumption due to the thanks giving tradition (R. H. Adams & Cuecuecha, 2010; Lamadirisi, 2015). Whereas previously explained that the coastal area has a lot of natural resources, fulfilling primary and secondary public consumption is not complicated to meet the community's demands. With a consumptive pattern like this, it will not be affected by the disruption of the economic crisis caused by COVID-19 and R-YouC. This insignificant relationship has also been seen when determining the reflective outer model of economic situation awareness, where there are two indicators, EA4 and EA6, are eliminated. Unlike regions or countries with economic growth based on investment and saving, rural areas are proven to have strong resilience compared to urban areas during economic, especially financial crises.

Hypothesis 5

Based on the results of the bootstrapping analysis, it was found that the influence of internal factor variables had no statistical significance on the performance of MSMEs. These findings are different from the previous researches (Fernández-Olmos & Ramírez-Alesón, 2017; Mohamad Radzi et al., 2017). The results of this insignificant relationship support the hypothesis of another study, in which a variable is needed to mediate the internal environmental strategy on the performance of MSMEs in times of economic recession. Hu & Kee (2021) argues that in a changing situation, businesses must face the fact that this pandemic has brought a new order of life. Thus, MSMEs must evolve with good innovation, primarily if this innovation is based on environmental preservation.

Based on the results of the PLS-SEM analysis, it was found that there was no significant direct influence between internal factors on MSMEs performance. This conclusion can be seen in table 36 where the p-value is above 0.05; thus, this hypothesis must be rejected. The role of eco-agropreneurship as mediation in this model is significant, especially for internal and external variables with indirect influence values of 4.5% and 8.4%, respectively. The effect of the eco-agropreneurship model can be seen in Q^2 size effect (q^2). External factors also show the same manifestation, similar to the internal environment, which does not have a statistically meaningful relationship with MSME performance. Before COVID-19 and R-YouC, these two variables have significant positive effects on the performance of MSMEs. However, MSMEs must be able to adapt to changes to improve performance, especially to the new normal and other measurements by the government.

4.6. Research Implication

This dissertation contributes to eco-innovation knowledge at the micro and small business levels and emphasizes low-tech businesses that use local expertise in coastal areas. It also helps answer the global economic crisis and how small businesses develop their businesses after Covid-19 and the Russia-Ukraine conflict.

The theoretical scope of eco-innovation and agropreneurship is expanding and becoming more beneficial regarding knowledge theory creation and practice. However, numerous previous researches left research gaps that must be addressed. Based on the SLR assessment of the literature using meta-synthesis and a meta-ethnographic methodology, this dissertation provides more significant suggestions for the generative processes and essential circumstances for diverse forms of eco-agropreneurship. Most of the previous research evaluated is based on so-called variance theories, which explain interactions between dependent and independent variables that focus on the causal effect only. Thus, this

dissertation combines qualitative and quantitative approaches for a more robust result. Employing this mix of quantitative and qualitative methodologies is a reliable way to gain deeper insights into the eco-agropreneurship concept.

As a result, this dissertation contributes to further research of eco-innovation theory based on entrepreneurial, organizational, institutional, and planned behavior. While other previous researches argue about the unfavorable of applying the eco-innovation concept, since this concept does not significantly impact profit, this dissertation proves that eco-agropreneurship has a significant impact on business performance, both financial and financial and non-financial.

This dissertation applies entrepreneurship theory and organizational theory to define eco-agropreneurship. This dissertation discovered the five dimensions of eco-agropreneurship using SLR. According to many researchers, eco-innovation has two dimensions: green product and process innovation. However, this dissertation distinguishes the aggregate dimensions based on: 1) the driver, which includes internal and external factors. While other theories debate stakeholder theory and agency theory, this dissertation focuses on the isomorphic concept by institutional theory, which is closely related to organizational theory and has been proven statistically significant on eco-agropreneurship. The other dimension is; 2) the performance consists of financial and non-financial; 3) innovation in ecopreneurship such as environmental protection, eco-innovation process, saving energy consumption, and social entrepreneurship. The second-order theme for 4) recycling and reuse as aggregate dimension are waste management and machine re-condition. The last aggregate dimension is 5) innovation in agropreneurship, such as investment in a new agriculture technology, product quality concern, and management aspect.

This dissertation uses organizational and local wisdom theories to approach the coastal area concept, emphasizing traditional skills and knowledge. Coastal area knowledge is essential to eco-agropreneurship. Subsequently, eco-agropreneurship successfully mediates between coastal area knowledge and business performance. This dissertation also used Ajzen's (1991) planned behavior theory to approach the current economic condition factor. This theory explains how people reacted to the new normal in post Covid-19 era and how people perceive the Russian-Ukraine conflict. According to statistical analysis, the current economic situation significantly impacts eco-agropreneurship.

The eco-agropreneurship concept is being adopted by a growing number of countries around the world, including Indonesia. Being one of the world's largest fish importers, Indonesia has a long coastline and an extensive sea area. Thus, utilizing coastal areas accompanied by

environmental pollution can affect the quality of the global marine environment. To address this issue, this dissertation discovered that external factors substantially impact eco-agropreneurship, with government regulation serving as a driving force in fostering eco-innovation in underdeveloped coastal areas. Based on these findings, the government and relevant parties, such as universities, should synergize to strengthen coastal areas through assistance and regulation, such as special environmental regulations based on local characteristics and training programs to support eco-innovation practices.

Internal variables such as information access, knowledge from traditional local farming in coastal areas, education, location, and micro-credit access also encourage the adoption of the eco-agropreneurship concept. Based on the statistical analysis, financial capital sources have been removed from the model. Identifying these elements allows policymakers and other proponents of eco-innovation in the agricultural sector to identify areas that need more attention. The government may consider expanding training possibilities for farmers using conventional technology to improve technologies such as Tumiwa's smart village concept (2022). In doing so, each component of eco-agropreneurship deserves proper attention, as these enhanced agricultural methods complement one another, thereby bridging the gap between the western and eastern parts of Indonesia. In addition to increasing the positive drivers of eco-agropreneurship, it is also essential to address aspects with little influence, such as financial capital sources.

5. CONCLUSION AND RECOMMENDATION

Based on the results of data processing, it is obtained and discussed, this dissertation draws conclusions in the figure of the final research model.

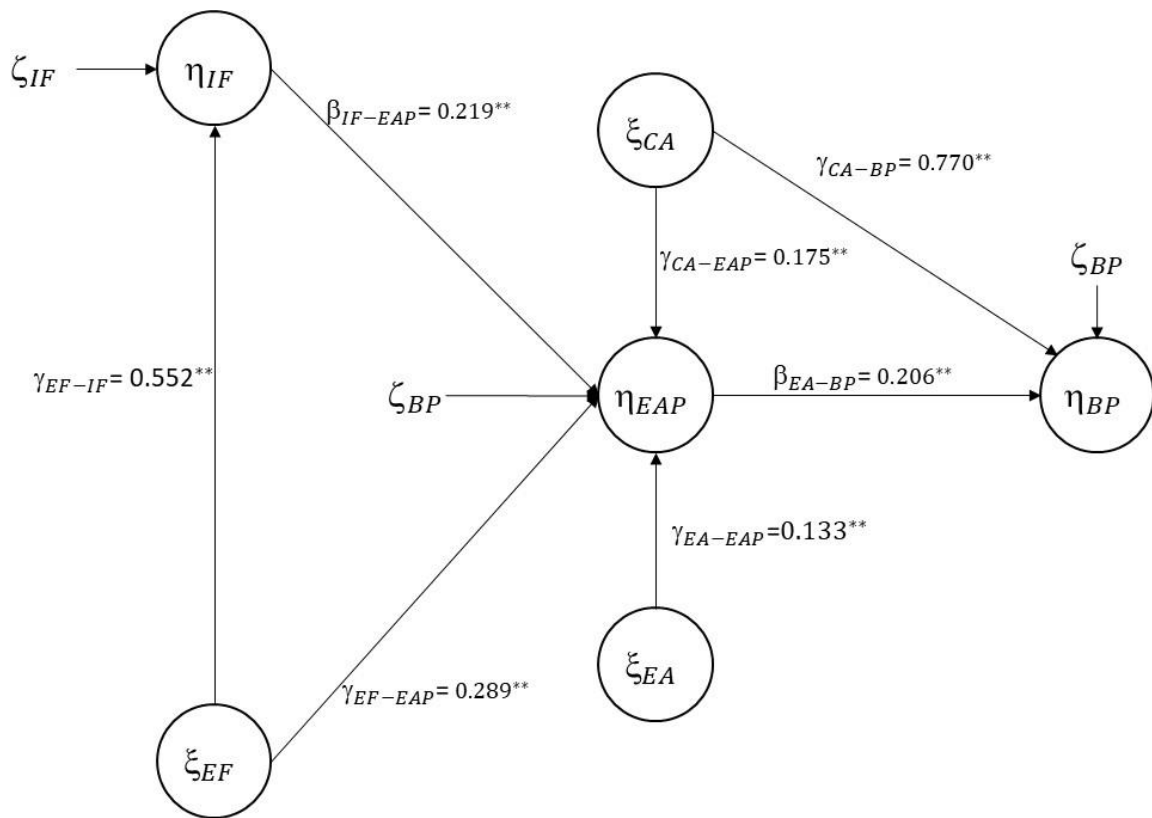


Figure 16. Final Research Model

Source: Modification of SmartPLS output, 2023

This dissertation has several limitations, including:

- This dissertation examines micro, small and medium enterprises (MSMEs), but from the results of the dissertation, it has been found that the majority of MSMEs that are the object of the dissertation are micro and small businesses only.
- Covid-19 caused this dissertation only to take one research area, namely coastal areas in 5 provinces in Indonesia, thus, the generalization of the results of this research is still limited.
- In this study, the measurement of the variables is only estimated based on the perceived opinion of owners/managers of micro, small and medium enterprises (MSMEs). One of the description analyses tries to reveal the income. However, it was not easy to generalize into variable measurement since it is only subjective and determined by the surveyor based on the data given per day, week, or month.

Suggestions for further research;

- It is necessary to increase the number of research coverage areas and might perform a PLS-MGA based on the coastal area or respondent's demographic.
- Further developing the model by adding other latent variables since the current economic concern variable does not significantly impact eco-agropreneurship.
- This dissertation focuses on developing countries. Exploring the factors that influence the sustainability of SMEs as influenced by local variables in developed countries can help create an understanding of the differences and similarities in various locations.
- For the related parties such as government to use this dissertation findings for further policy implementation.

6. NOVEL FINDING

The following are some significant novelties in this dissertation:

1. I confirmed that this dissertation successfully combined the ideas of eco-preneurship and agro-preneurship using the SLR technique. Based on data analysis and a significant outcome research model, I verify that the eco-agropeneurship model has been shown to be effectively structured based on the statistical significance of the predictive relevance value.
2. Based on the structural equation modeling, I proved that the concept of green/eco/social-entrepreneurship (eco-agropreneurship) has a significant influence on MSME's performance, financial and non-financial.
3. This dissertation provides an indicator of reflective measurement of the latent variable of eco-agropreneurship using the SLR method. In addition, it also contributes to reflectors of internal and external factors, coastal areas, and current economic situation awareness. These research indicators can be used as a benchmark for further research.
4. My dissertation proved that the eco-agropreneurship model has a high value in compatibility. The eco-agropreneurship variable is also well fit to mediate internal and external factors, coastal area, and economics awarness on company performance.
5. This dissertation can also serve as a model for how to use PLS-SEM comprehensively for the outer reflection model. This dissertation demonstrates all of the calculations required to determine GoF, based on the global fit PLS path model proposed by Tenenhaus (2000), and this global fit model has proved more resilient than the fit model criterion provided by the SmartPLS. I also verify that this dissertation successfully provides an example of mathematical equation formula for PLS-SEM.

7. SUMMARY

Indonesia has a vast coastal area and abundant natural gifts, making Indonesia a member of the G20 countries. MSMEs are believed to play an essential role in utilizing these resources as the backbone of the national economy. However, previous studies discussed that improving the MSMEs performance was inversely proportional to the environmental impact, especially for the manufacturing industry. Currently, besides international trade and ecological preservation issues, MSMEs face a global economic crisis caused by the COVID-19 pandemic and R-YouC that significantly impacts the national economy. Many studies suggest that MSMEs must become pioneers in environmental conservation, agents of change, and pioneers in saving the future through concrete actions. However, there are also many debates about the unfavorable effects of applying the concept of environmental preservation to business performance related to profit, especially in a developing country. Some researchers suggest concepts called agro-entrepreneurship and livelihood approach in generating profit for businesses in rural areas.

Internal and external factors are believed to influence MSMEs' performance significantly. However, during the economic crisis due to COVID-19 and R-YouC, these internal and external factors should be tested with a statistical approach. Regard Indonesia's advantages lies in its enormous coastal area with abundant resources, this dissertation purpose a model of eco-agropreneurship that is influenced by internal and external factors, coastal area variable, and current economic awareness variable, and then the influence of eco-agropreneurship effects on MSMEs performance.

As a theoretical approach, this dissertation carries two grand theories, entrepreneurship, and organizational behavior. Subsequently, from the grand theories, this dissertation constructs the middle theory and applied theory to explain the current phenomenon or background of the problem in the introduction such as institutional theory, planned behavior, coastal communities in rural areas, and the current economic situation awareness of COVID-19 and R-YouC.

The object of this dissertation is coastal areas in several cities and regions in several provinces in Indonesia. Since 17 provinces in Indonesia have coastal coasts, this dissertation uses 5 (five) provinces in northeastern Indonesia that consider less developed compared to the western part. Therefore, the sample of this dissertation is 312 respondents after eliminating the outlier.

This dissertation uses SLR and TAA filtering methods to define the eco-agropreneurship measurement. Since the number of eco-agropreneurship indicators is enormous, this

dissertation uses factoring reduction analysis using PCA to reduce the indicators. Furthermore, this dissertation uses descriptive analysis for the respondents' characteristics and lambda value of the latent variables.

The PLS-SEM goodness of fit model is measured by analyzing the inner and outer models' congruence and then purpose the global PLS path model by Tenenhaus (2000).

Based on the SLR and TAA findings, PCA, descriptive analysis, and PLS-SEM, this dissertation concludes that MSMEs can improve their profit performance by implementing eco-agropreneurship. Furthermore, there is no direct influence between internal and external factors on MSMEs performance during the economic crisis due to COVID-19 and R-YouC. Internal and external factors will only have a statistically significant influence through the eco-agropreneurship variable. Other latent variables that affect eco-agropreneurship are current economic awareness and coastal areas. This research has implications for further research direction and related parties for the policymakers to consider the eco-agropreneurship model.

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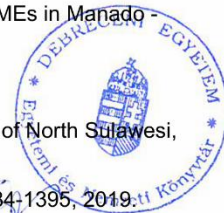
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Candidate: Johan Reineer Tumiwa
Doctoral School: Károly Ihrig Doctoral School of Management and Business
MTMT ID: 10071793

List of publications related to the dissertation

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1. **Tumiwa, J. R.**, Tuegeh, O. D. M., Bittner, B., Nagy, A. S.: The challenges to developing smart agricultural village in the industrial revolution 4.0.
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The Candidate's publication data submitted to the iDEa Tudóstér have been validated by DEENK on the basis of the Journal Citation Report (Impact Factor) database.

29 August, 2022



Attachment

List of 96 Articles Included

Author/s	Title	Variable
Hansen, David J.	Opportunity development: An exploratory study of ecopreneurs using a creativity perspective	Career development
McMurchie, Leslie		Case study
Monllor, Javier		Creativity
(2012)		Ecopreneur
		Entrepreneurialism
		Opportunity development
		Sustainability
Awotunde, Olusegun	Entrepreneurial self-efficacy development: An effective intervention for sustainable student entrepreneurial intention	Action learning
Matthew		Action research
van der Westhuizen, Thea		Entrepreneurial action
2021		Entrepreneurial eco-systems
		Entrepreneurial intention
		Entrepreneurial mindset
		Entrepreneurial self-efficacy
		Entrepreneurship education
		SHAPE
		Shifting hope activating potential entrepreneurship
Rabadán, Adrián	Why European Entrepreneurs in the Water and Waste Management Sector Are Willing to Go beyond Environmental Legislation	Drivers
Sáez-Martínez, Francisco		Environmental responsibility
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Ball, Christopher	Removing environmental market failure through support mechanisms: insights from green start-ups in the British, French and German energy sectors	Eco-innovation
Kittler, Markus		Energy
2019		Environmental entrepreneurship
		Environmental market failure
		Green start-up
		Support mechanism

Vatansever, Çigdem	What color is the green entrepreneurship in Turkey?	Content analysis
Arun, Korhan		Eco entrepreneurship
2016		Ecopreneur
		Green business
		Green entrepreneurship
Boutillier, Sophie	The economics of the entrepreneur and the banker historical roots and contributions to the management of innovation	Banker
2020		Entrepreneur
		Financing
		Innovation
		Risk
	Strong and weak ties	
Klimenko, Tatyana I	Modeling factors of environmental tourism development in innovation economy	Business activity of service sector organizations
Shinkevich, Alexey I		Development trends
Kudryavtseva, Svetlana S.		Ecology
Shinkevich, Marina V		Economic and mathematical analysis
Barsegyan, Naira V		Ecotourism
Farrakhova, Angelika A		Innovative economy
Ishmuradova, Izida I.		
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Lanfranchi, Maurizio	Sustainable technology as an instrument of the environmental policy for the attainment of a level of socially acceptable pollution	Environmental taxation
2010		sustainable development
		sustainable technology
Santini, Cristina	Ecopreneurship and Ecopreneurs: Limits, trends and characteristics	Agribusiness
2017		Ecopreneur
		Ecopreneurial orientation
		Ecopreneurship
		Sustainability
	Sustainable orientation	
Wang, Feng		Ecological civilization

He, Hongqu	A study on the social characteristics, opportunities and growth mechanism of college students' entrepreneurial teams based on ecological civilization	Entrepreneurship opportunity
2019		Growth mechanism
		Reliability analysis
		Social characteristics
		Validity analysis
Roomi, Muhammad Azam	Measuring sustainable entrepreneurship and Eco-innovation: A methodological proposal for the global entrepreneurship monitor (GEM)	Eco-innovation
Saiz-Alvarez, José Manuel		Global Entrepreneurship Monitor (GEM)
Coduras, Alicia		
2021		Sustainable entrepreneurship
Ucenic, Camelia Ioana	Exploratory research regarding the evolution and nowadays condition of Romanian eco-businesses	Eco-business
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2008		Eco-product
		Entrepreneurship
		Sustainability
Ociepa-Kubicka, A.	Eco-innovations in the functioning of companies	Companies
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2017		Water and sewage enterprises
Tantayanubutr, Monika Panjakajornsak, Vinai	Impact of green innovation on the sustainable performance of thai food industry	Demographic variables
2017		Financial inclusion
		Insurance quiz
		Microinsurance
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Lu, Yurong		environmental awareness
2021		environmental ethics
		green innovation
		responsible leadership
Schaltegger, Stefan	A Framework for Ecopreneurship	
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Šebestová, Jarmila		Circular economy
Sroka, Włodzimierz		Recycling

2020	Sustainable development goals and sme decisions: The czech republic vs. poland	Sustainable business Waste management
Millette, Sherwyn	Business incubators as effective tools for driving circular economy	Circular economy
Eirikur Hull, Clyde		Circular economy incubator
- Williams, Eric		Entrepreneurship
2020		Material flows analysis
Ben Amara, Dhekra	Role of entrepreneurial opportunity identification factors in the eco-innovation of agribusiness	agribusiness
Chen, Hong		eco-innovation
Hafeez, Muhammad		entrepreneurial alertness
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		sustainable development
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2005		
Fitria, Sisca Eka	The influence of eco-preneurship dimensions towards students' new business at Telkom University in Indonesia	Eco-commitmen
Yuliana, Eka		Eco-innovation
2018		Eco-opportunity
		Eco-preneurship
Zolfaghari Ejlal Manesh, Seyed Meysam	International ecopreneurs: The case of eco-entrepreneurial new ventures in the renewable energy industry	Ecopreneurs
Rialp-Criado, Alex		Internationalization
2019		Motivation
		Opportunity recognition
		Renewable energy industry
Leroux, Erick	Factors of adoption of eco-labelling in hotel industry	Choice
Pupion, Pierre Charles		Entrepreneurial orientation
2018		Green innovation
		Intention
Yang, Xu	The evolution of new ventures' behavioral strategies and the role played by governments in the green	Eco-innovation
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Li, Runmao		Government regulation

2021	entrepreneurship context: an evolutionary game theory perspective	Green entrepreneurship Greenwashing New ventures
Gliedt, Travis	Innovation intermediaries accelerating environmental sustainability transitions	Champion
Hoicka, Christina E		Green economic development
Jackson, Nathan		Incubator
2018		Institutional uncertainty Policy entrepreneurship
Refsgaard, Karen	Bioeconomy – A driver for regional development in the Nordic countries	Bioeconomy
Kull, Michael		Circularity
Slätmo, Elin		Employment development
Meijer, Mari Wøien		Governance
2021		Institutional innovation
Ben Amara, Dhekra	Evaluating the eco-innovation strategy in business opportunity identification-enterprise business growth nexus	Agricultural and agri-food
Hong, Chen		Business growth
Hafeez, Muhammad		Eco-innovation strategy
2019		Opportunities identification
		Sustainable development
Renfors, Sanna Mari	Identification of ecopreneurs' business competencies for training program development	business competence
2019		ecopreneurship
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		sustainability
		training
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Botrić, Valerija		Environmental benefits
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2021		
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Singh, Archana		Interpretive structural model
Sharma, Adya		MICMAC

2016	and sustainability using ISM and MICMAC methodology	Sustainability
Kearins, Kate	Making Sense of Ecopreneurs' Decisions to Sell Up	Ecopreneurship
Collins, Eva		Enterprise development
2012		Sensemaking
Schaper, Michael	Introduction: The Essence of Ecopreneurship	
2002		
Oncioiu, Ionica	White biotechnology - a fundamental factor for a sustainable development in Romanian SMEs	Environmental sustainability
Boteanu, Carmen		Green clothes
Mihaela		
Druica, Elena Nolica		Organic materials
Vaduva, Florin		SME's
2015		White biotechnology
Kunasekaran, Puvaneswaran	Factors influencing perceptions of local community on 'kelulut' honey as Agrotourism product	Agropreneur
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Hassan, Engku Nor Kamilah Engku		Rural attraction
Ramachandran, Sridar		Stingless bee farm
2018		
Peralta, Alberto	Sustainable business model innovation and acceptance of its practices among Spanish entrepreneurs	PLS-SEM
Carrillo-Hermosilla, Javier		acceptance
Crecente, Fernando		eco-innovation
2019		factors
		sustainable business model
		triple bottom line
Rodgers, Cheryl	Sustainable entrepreneurship in SMEs: A case study analysis	Ecopreneur
2010		Entrepreneurship
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		SME
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2002		
Dodd, Tracey	What stalls a renewable energy industry? Industry outlook of the aviation biofuels industry in Australia, Germany, and the USA	Eco-innovation
Orlitzky, Marc		Environmental entrepreneurship
Nelson, Tim		Environmental protection
2018		Industry emergence
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Ra, Sungsup	Creating high-tech ‘agropreneurs’ through education and skills development	Developing Asia
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		food security
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Triguero, Ángela	Environmental innovation and employment: Drivers and synergies	Eco-innovation
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2021		Fourth industrial revolution
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2019		Entrepreneur
		Small enterprise

	of Eco-Innovations in Dunkirk, North of France	Territory
Randjelovic, Jelena	The emergence of green venture capital	
O'Rourke, Anastasia R.		
Orsato, Renato J.		
2003		
Cheng, Cheng	Spatial dynamics and determinants of sustainable finance: Evidence from venture capital investment in China	Government guidance fund, China
Hua, Yue		Spatial dynamics
Tan, Duoduo		Sustainable finance
2019		Venture capital
Kushwaha, Gyaneshwar Singh		Factors Influencing Young Entrepreneurial Aspirant's Insight Towards Sustainable Entrepreneurship
Kumar Sharma, Nagendra	ENTREPRENEURIAL ASPIRANTS	
2017	GREEN MARKETING	
	SUSTAINABLE ENTREPRENEURS	
Puerta-Sierra, Lizbeth	University-industry collective actions framework: societal challenges, entrepreneurial interactions and outcomes	University-industry collaboration
Montalvo, Carlos		entrepreneurial interactions
Angeles, Adrianela		entrepreneurial university
2021		innovation ecosystems
El Harbi, Sana	What makes Tunisian ecopreneurs satisfied with their job?	Ecopreneur
Grolleau, Gilles		Job satisfaction
		Regression
Ammar, Sonia Hadj		Social influences
2011		
Sáez-Martínez, Francisco José	The role of university in eco-entrepreneurship: Evidence from the eurobarometer survey on attitudes of european entrepreneurs towards eco-innovation	Eco-entrepreneurship
González-Moreno, Ángela		Eco-innovation
Hogan, Teresa		Entrepreneur
2014		Eurobarometer

		University
Ben Amara, Dhekra	The impact of participative decision-making on eco-innovation capability: the mediating role of motivational eco-innovation factors	Eco-innovation capability
Chen, Hong		Entrepreneurship
2021		Motivational factors
		Participative decision-making
		Sustainable development
Kirkwood, Jodyanne	How ecopreneurs' green values affect their international engagement in supply chain management	Case studies
Walton, Sara		Ecopreneurs
2010		Environmental entrepreneurs
		Environmental issues
		Supply chain management
Papadopoulos, Ioannis	Mainstreaming green product strategies why and how furniture companies integrate environmental sustainability?	Economic crisis
Karagouni, Glykeria		Environmental sustainability strategies
Trigkas, Marios		Furniture markets
Beltsiou, Zoi		Greece and Cyprus furniture enterprises
2014		Green entrepreneurship
		Green wooden furniture
Burzyńska, Dorota	Opportunities and conditions for the development of green entrepreneurship in the polish textile sector	Green entrepreneurship
Jabłońska, Malgorzata		Innovations
Dziuba, Radosław		Textile industry
2018		
Crecente, Fernando	Climate change policy and entrepreneurial opportunities	Circular economy
Sarabia, María		Climate change
Teresa del Val, María		Sustainability and entrepreneurship
2021		
Dorathy, M. Bina Celine	Green Shipping - A plethora of business opportunities for ecopreneurs	Creative destruction
2017		Ecopreneurship
		Environmental sustainability
		Green shipping
Kirkwood, Jodyanne		Earthquake

Dwyer, Kirsty	An ecopreneur's growing resilience after a series of earthquakes	Ecopreneur
Walton, Sara		Resilience
2017		
Mikhno, Inesa	Modeling corporate games to increase the ecological value of entrepreneurship and innovative business	
Koval, Viktor		
Korenyuk, Petro		
Smutchak, Zinaida		
Bozhanova, Viktoriia		
2021		
Affolderbach, Julia	"Just" ecopreneurs: re-conceptualising green transitions and entrepreneurship	Just entrepreneurship
Krueger, Rob		ecopreneur
2017		environmental justice
		innovation
		urban sustainability
Ferrari, G	Environmental Sustainable Management of Small Rural Tourist Enterprises	ecopreneur
Mondejar-Jimenez, J		environment
Vargas-Vargas, M		fimix
2010		sustainable rural tourism
Vlasov, Maxim	Suffering catalyzing ecopreneurship: Critical ecopsychology of organizations	Back-to-the-land
Heikkurinen, Pasi		degrowth
Bonnedahl, Karl Johan		ecological embeddedness
2021		ecopreneurship
		ecopsychology
		suffering
Fichter, Klaus	Factors influencing university support for sustainable entrepreneurship: Insights from explorative case studies	Entrepreneurial university
Tiemann, Irina		Explorative case studies
2018		Support system
		Sustainable entrepreneurship
		Sustainable university
		University
Musa, Siti Fatimahwati Pehin Dato	Investigating agropreneurial intention among students in	Agribusiness

Idris, Dk Siti Rozaidah Pg Hj	higher learning institution using the theory of planned behaviour	Agropreneur
Haris, Nur Bahiah Mohamed		Ajzen Theory of Planned Behaviour
2021		Entrepreneurship Youth
Pastakia, Astad	Grassroots ecopreneurs: Change agents for a sustainable society	
1998		
Gallis, Helene	Sustainable Entrepreneurship in Africa	entrepreneur strategic approach sustainability sustainable development
2010		
Marin, Giovanni	SMEs and barriers to Eco- innovation in the EU: Exploring different firm profiles	Barriers to innovation
Marzucchi, Alberto		Eco-innovation
Zoboli, Roberto		Green strategy
2015		SMEs
Setyawati, Irma	A visual trend of literature on ecopreneurship research overviewed within the last two decades	Ecopreneur
Purnomo, Agung		Ecopreneurship
Irawan, Dasapta Erwin		Entrepreneurship
Tamyiz, Muchammad		Scientometric
Sutiksno, Dian Utami		
2018		
Kirkwood, Jodyanne	What motivates ecopreneurs to start businesses?	Business formation
Walton, Sara		Entrepreneurs
2010		Motivation (psychology)
Triguero, Angela	Drivers of different types of eco-innovation in European SMEs	Drivers of innovation
Moreno-Mondéjar, Lourdes		Environmental innovation (eco-innovation)
Davia, María A.		Organizational innovation
2013		Process innovation
		Product innovation
		SMEs

Cherrier, H�el�ene	Corporate environmentalism and top management identity negotiation	Corporate environmentalism
Russell, Sally V.		Identity
Fielding, Kelly		Organizational change
2012		Sustainability
		Sustainable development
		Top management
Reitano, Antonella	Sustainability, eco-innovation and technology - an Italian perspective	eco-innovation
Taylor, David		green entrepreneurs
Greig, Karen		sustainability
Sposato, Carla		technology marketing
2014		
Rosenlund, Joacim	The environmental concerns of food ecopreneurs	Ecopreneurship
2021		Entrepreneurship
		Passion
		Sustainability
Dash, Amarendra Kumar	The Limits and Leverages of Ecological Entrepreneurship	
Kumar, Vivek		
2021		
Piowar-Sulej, Katarzyna	Environmental entrepreneurship – Bibliometric and content analysis of the subject literature based on H-Core	Bibliometric analysis
Krzywonos, Malgorzata		Ecopreneur
Kwil, Izabela		Environment
2021		Environmental entrepreneurship
		Environmental issue
		Sustainable entrepreneurship
Zhao, Aiwu	Research on the evolution of innovation behavior of new generation entrepreneurs in different scenarios	Computational experiment
Sun, Zhenzhen		Evolution
Guan, Hongjun		Innovation behavior
Jia, Jingyuan		New generation entrepreneur
2020		Scenario
Sarkar, A. N.		Eco-efficiency

2013	Promotion of eco-innovation to leverage sustainable development of eco-industry and green growth	Eco-innovation Eco-models Green marketing Green-growth Impact measurements
Hoogendoorn, Brigitte van der Zwan, Peter Thurik, Roy 2019	Sustainable Entrepreneurship: The Role of Perceived Barriers and Risk	Barriers Flash Eurobarometer Institutional environment Market failures Risk Sustainable entrepreneurship
Li, Xing Liu, Lin 2018	Ecological innovation decision behavior of enterprises in the strategic emerging industrial clusters based on cognitive neuroscience	Cognitive Neuroscience Decision-Making Behavior Eco-innovation Strategic Emerging Industry
Yusoff, Asliza Ahmad, Noor Hazlina Abdul Halim, Hasliza 2019	Unravelling agropreneurship activities among Malaysian Gen Y: Social institutional factors as enablers	Agricultural entrepreneurship Entrepreneurial intention Psychological variables Social institutional variables
Kummitha, Harshavardhan Reddy 2021	Can ecopreneurs contribute to ecotourism development: A comparative study of the pre-And post-establishment periods of kabani (Ecopreneur Organisation)	Community development Destination development Ecopreneurship Ecotourism
Putri, Rizky Nur Ayuningtyas Rahardjo, Mugi Gravitiani, Evi 2019	Ecopreneurship: Production costs and break-even point analysis of ecopreneur in Sragen, Indonesia	Break-even point Micro-entrepreneurs Production cost Recycling
Gibbs, David 2006	Sustainability entrepreneurs, ecopreneurs and the development of a sustainable economy	

Hoogendoorn, Brigitte van der Zwan, Peter	Goal heterogeneity at start-up: are greener start-ups more innovative?	Environmental regulations Global Entrepreneurship Monitor
Thurik, Roy 2020		Goal heterogeneity Green entrepreneurship Innovation Start-ups
Udiyana, Ida Bagus Gede Suastama, Ida Bagus Radendra	Innovation strategy the development of competitiveness of eco-based coastal tourism destination, management organization and quality of services	Innovation and infrastructure innovation strategy Organizational and management innovation strategy SWOT analysis Service quality innovation strategy
Astini, Ni Nyoman Seri Mahanavami, Gusti Ayu Karwini, Ni Ketut Maretta, Yoris Adi 2018		
Thiers, Paul 2002	From grassroots movement to state-coordinated market strategy: The transformation of organic agriculture in China	
Strydom, Carmen Meyer, Natanya Synodinos, Costa 2021	South african generation y students' intention towards ecopreneurship	Entrepreneurship Ecopreneurship Environment Generation Y Green entrepreneurship Intention
Veleva, Vesela Bodkin, Gavin 2018	Corporate-entrepreneur collaborations to advance a circular economy	Circular business models Circular economy Environmental entrepreneurs Product reuse Sustainability Waste repurposing
Sonne, Lina		Entrepreneurship

2012	Innovative initiatives supporting inclusive innovation in India: Social business incubation and micro venture capital	Financial innovation Inclusive finance Inclusive innovation India's financial system Rural finance
Baran, Agnieszka 2021	Sustainable Innovations – Selected Aspects	innovations protection of intellectual sustainable development sustainable innovations
Rena Yadav, Shraddha Patel, Shubham Killedar, Deepak J. Kumar, Sunil Kumar, Rakesh 2022	Eco-innovations and sustainability in solid waste management: An indian upfront in technological, organizational, start-ups and financial framework	Bioproducts Circular economy Recycling Eco-innovations Resource recovery Smart technologies
Corazza, Laura Cisi, Maurizio Falavigna, Greta 2022	The enabling role of formalized corporate networks to drive small and medium-sized enterprises toward sustainability	
Ben Amara, Dhekra Chen, Hong 2022	Driving factors for eco-innovation orientation: meeting sustainable growth in Tunisian agribusiness	Agribusiness Driving forces Eco-innovation strategy Environmental orientation Sustainable growth
Alraja, Mansour Naser Imran, Rabia Khashab, Basel M Shah, Mahmood 2022	Technological Innovation, Sustainable Green Practices and SMEs Sustainable Performance in Times of Crisis (COVID-19 pandemic)	Green practices Resource based view Sustainable performance Technological innovations Technology-organisation-environment
Palmås, Karl		Eco-enterprise

Lindberg, Jonas	Livelihoods or ecopreneurship? Agro-economic experiments in Hambantota, Sri Lanka	Ecopreneurship
2013		Entrepreneurialism
Indaco-Patters, Sarah	Micro-ecopreneurs and the UK food industry: Short-term fad or sustainable reality?	Entrepreneurs
Fearon, Colm		Food industry
Nolan, Connie		Food retail
Warden, Katy		
2013		
Phillips, Mary	On being green and being enterprising: Narrative and the ecopreneurial self	Discourse
2013		ecopreneur
		environment
		identity
		narratology
		positioning
Kirkwood, J.	How green is green? Ecopreneurs balancing environmental concerns and business goals	ecopreneurs
Walton, S.		environmental entrepreneurship
2014		growth
		start-up
		sustainability

Table TAA excluded articles

No	Author/s	Title	TAA Description
1.	Conlon et al., 2019	Circular economy: Waste-to-Wealth, Jobs Creation, and Innovation in the Global South	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “innovation”.
2.	Lavuri et al., 2022	Green Factors Stimulating the Purchase Intention of Innovative Luxury Organic Beauty Products: Implications for Sustainable Development	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “green”.

3.	Leroux and Pupion, 2018.	Factors of Adoption of Eco- Labelling in Hotel Industry	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “green innovation”, does not relate to entrepreneur
4.	Bonci et al., 2018	Collaborative Intelligence Cyber-Physical System for The Valorization and Re-Use of Cultural Heritage	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “social” and “innovation”
5.	Carvalho et al., 2016	Promotion of Sustainability by Quantifying and Reducing the Carbon Footprint: New Practices for Organizations	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “social” and “innovation”. Subsequently, this article is a book chapter. However, in the Scopus databases, it is categorized as an article.
6.	Lavuri et al., 2022.	Green Factors Stimulating the Purchase Intention of Innovative Luxury Organic Beauty Products: Implications for Sustainable Development	Content did not match with the research topic. The only thing that matches with the searching criteria is the keywords “environmental
7.	Sa’uadi and Rahman, 2019	An Agricultural-Related Information Elements and Provision for Agripreneurship One-Stop Information Portal	Article is not available in any platform or it might has taken down.
8.	Jacomossi et al., 2019	Determinants And Challenges of Eco-Innovation Through a Case Study	Article is in Portuguese Brazilian language
9.	Ghani, 2018	Biomass Energy Flow Screening for Good Governance in Agricultural System: A Case Study in Terengganu State	Article discusses biomass in the agriculture sector and has an agropreneur keyword. However, the article does not discuss entrepreneur innovation.
10.	Rosmiza et al., 2019	Agripreneur's Knowledge on The Potential of Spent Mushroom Substrate and Post-Harvest Management Methods of Mushroom Cultivation	Article is in Malaysian language.
11.	Rosmiza and Hussin, 2017	Agropreneurs' inclination to participate in the Johor mushroom industry	Article is in Malaysian language