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Mangroves as a Pillar of the Blue Economy: Potential and Challenges in Climate Change Mitigation

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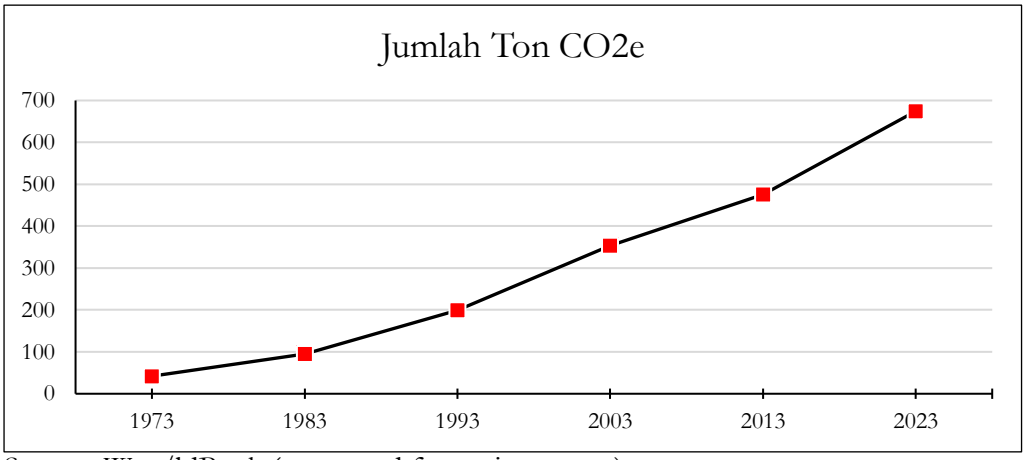
Abstract

The significant increase in carbon dioxide emissions in Indonesia poses a major threat to the sustainability of natural ecosystems and the economic resilience of coastal communities. In response to this threat, the concept of the blue economy emerged as an approach that balances economic growth and ecosystem conservation. One of the important climate change mitigation efforts is the planting and cultivation of mangroves, which are known to have a high capacity to absorb and store carbon. This study aims to identify the potential and challenges of mangrove management in supporting the blue economy and climate change mitigation, with a focus on Kebumen Regency, Indonesia. Using quantitative approaches and Structural Equation Modeling (SEM-PLS), this study analyzes public perceptions of environmental sustainability, financial motivation, governance, community participation, cultural and social values, as well as environmental risks and their impact on people's intentions to support the blue economy. The results show that perceptions of environmental sustainability, financial motivation, and social culture have a significant influence on the intention to support the blue economy, but these influences are limited to contexts involving complex institutional and management factors. The intention to support the blue economy turns out to have a negative effect on blue economy outcomes, such as the quality of life of coastal communities and the preservation of coastal ecosystems, which shows that there are structural obstacles and uncertainties that need to be overcome to achieve more optimal results. This study suggests the importance of integrating economic, social, and environmental aspects in sustainable blue economy-based mangrove management.

INTRODUCTION

Today, carbon dioxide emissions in Indonesia continue to increase, which has the potential to threaten the sustainability of natural ecosystems. Based on Figure 1, there is a *positive trend of* increasing CO2 emissions in Indonesia. This means that the ratification of the Paris Agreement and the commitment to achieve *net zero emissions* by 2060 are only paradoxical, as national emissions continue to increase, even reaching 1 billion tons of CO2 equivalent (CO2e) per year. This surge is not just a statistical figure, but hints at a major challenge in realizing sustainable development in Indonesia. In other words, the impact of global warming such as rising temperatures, unpredictable seasonal patterns, and the intensity of hydrological disasters in various regions are increasingly real.



Source: Wor/ldBank (processed for various years)

Figure 1. CO2 Emission Trends in Indonesia

The impact of global warming in Indonesia is a threat not only to nature, but also to humans. Coastal and marine ecosystems, which are the habitat of flora and fauna, face damage due to coastal erosion and abrasion. Thus, for humans, especially coastal communities, this damage causes an increase in the risk of residential disasters, the loss of fishery resources which are the main income of the community, and has the potential to disrupt food security and the local economy. With the emergence of these threats, global warming is not only an environmental issue, but also a crisis of sustainability of the economic resilience of the community and ecosystem. (Adom, 2025)

The escalation of environmental damage that is an obstacle to sustainable development presents a new idea, namely *the blue economy* Sarker et al., (2019) . Quoting from, *the blue economy* is a concept that focuses on the sustainable use of marine resources and encourages a balance between economic growth, ecosystem health, and minimizing environmental damage. This means that in the framework of the blue economy, harmony and harmonization between economic activities and ecosystem conservation and restoration efforts are the main priorities. Thus, implementing the blue economy concept is part of efforts to mitigate the threat of climate damage. (Alcantara et al., 2023; Bai & Li, 2023)

Basically, there are many ways to mitigate environmental damage due to global warming. Several previous studies, both case studies in Indonesia and abroad, have found that mangrove planting and cultivation is a form of mitigation in marine and coastal areas, because it has a high capacity to absorb and store carbon. Citing research Choudhary et al., (2024) , mangrove trees can capture CO2 gas in the atmosphere through the process of photosynthesis, and store carbon in the form of biomass and sediment. Furthermore, with a complex root system, the decomposition process of these materials and sediments is quite slow, so that it is able to hold carbon for a long period of time. Based on this structure, mangrove forests are the most efficient carbon store, and give rise to the idea that mangroves are a pillar in the "*blue economy*" strategy and climate change mitigation. (Alongi, 2020; Huang et al., 2025; Rogers et al., 2019)

In case studies in Indonesia, many have proven the effectiveness of mangroves as an effort to maintain the sustainability of marine and coastal areas. For example, a study by Yanuar et al., (2023) the Thousand Islands showed a positive correlation between mangrove biomass and carbon concentration, which means that it strengthens the argument that mangroves have a high potential to absorb carbon emissions. Other studies on the island of Borneo have shown that mangroves do not store carbon alone, but also have a broader range of mitigation on other ecosystems, such

as soil and other resources. On the island of Java, especially the tourist destination of Laguna Sagara Anakan, research by Laguna Khasanah et al., (2025) and Sumarni et al., (2024) Febrianto et al., (2023) and Hilimi et al., (2019) showed similar findings. The mangrove forests that grow in the location strengthen the role of mangroves in carbon mitigation. Furthermore, research by the mangrove ecosystem in Riding Panjang village, Bangka Belitung Regency resulted in the finding that mangrove forests in the region have a large enough carbon stock, so sustainable mangrove management is important to protect coastal areas from damage due to climate change. In other regions, namely the islands of Sumatra and Riau, several previous studies have proven the important role of mangroves in mitigating climate change. For example, research in the city of Tanjungpinang, Riau, provides evidence that mangroves in the location have significant blue carbon sequestration potential. Furthermore, despite being on small islands from South Sumatra, such as Maspri Island, the mangrove forests in the region still have a large carbon absorption capacity, and contribute to the reduction of carbon emissions. Still in the same area, research shows that the existence of mangrove forests also supports the increase of local economic activities through Aprilita et al., (2024) Febriansyah et al., (2025) (Ulqodry et al., 2025) Harefa et al., (2022) *the silvofishery* system, which is integrating mangrove forests with ponds/fishery ponds in the same ecosystem.

Digging deeper into the correlation of mangrove forests with environmental damage mitigation, studies abroad also provide aligned findings. Research by China, for example, shows that mangrove forest restoration efforts in coastal areas can significantly increase carbon sequestration capacity. These restoration efforts also have an impact on the restoration of marine fauna habitats and the resilience of coastal areas to climate threats. Similar findings are also shown by , where the restoration of mangrove ecosystems is not only a storage of carbon stocks, but also an effort to improve the structure of coastal ecosystems for protection from natural disasters. The results of the study affirm the function of mangrove restoration as part of the Ratul et al., (2022) Beselly et al., (2025) *blue economy* framework that provides long-term benefits, namely climate change mitigation and increasing the resilience of coastal ecosystems from external threats. Similarly, research confirms the role of mangroves in maintaining global carbon balance. Adame et al., (2021)

Despite the importance of mangrove functions to ecological and economic resilience, the phenomenon of high land degradation and deforestation of mangrove forests in Indonesia presents concerns. Citing empirical data from the book, many mangrove forests in Indonesia have been converted into shrimp ponds, plantations or other land uses. This action leads to a reduction in natural mangrove ecosystems. The real condition in Segara Anakan, where land degradation upstream causes sediment from the area to flow through the river flow and causes disturbance of mangrove functions, such as reduced carbon sequestration capacity, destruction of coastal areas, and decreased ecological function and community income. Therefore, to maintain the natural function of mangroves, it is necessary to have sustainable management of mangrove ecosystems. Jennerjahn et al., (2022) (Singh et al., 2022; Song et al., 2021) (Rahman et al., 2024)

Basically, sustainable mangrove management talks about the integration of mangrove functions ecologically and economically, such as in the framework of *the blue economy*. This means that the management of mangrove ecosystems is expected to be able to preserve nature and provide *an economic multiplier effect* for coastal communities. In contrast to previous studies that conducted partial analysis and focused a lot on ecological aspects only, this research was conducted with a holistic approach. This means that mangrove management is not only focused on preserving

the ecosystem, but also improving the economic welfare of coastal communities. Therefore, this research aims to identify the potential and challenges of sustainable mangrove management to drive ecological and economic benefits.

METHODS

This research aims to identify the potential and challenges of mangrove management in supporting *the blue economy* and climate change mitigation, with a focus on mangrove forests in Kebumen Regency. This study uses primary data, where the population is all communities located in marine and coastal areas, and samples determined by *stratified random sampling method*. Based on the calculation of samples, 302 samples were obtained for testing.

Furthermore, this study uses a questionnaire as a research instrument, with a likert scale of 1 to 7 which describes perceptions of strongly disagree to strongly agree. In the questionnaire there are 7 constructs consisting of several question items as indicators of their formation. The details of the construct and its indicators can be seen from the following table.

Table 1. Construct Variables and Research Indicators

EN	**Perception of Environmental Sustainability**
	1. I know eco-friendly practices that support mangrove ecosystems
AFM	**Perceptions of Financial Motivation**
	1. Mangroves encourage business diversification in my area
	2. I am interested in utilizing technology to process mangrove products
GOV	**Perception of Governance and Community Participation**
	1. Mangrove management rules in this region are clear and transparent
	2. There is a monitoring mechanism for mangrove management
CP	**Cultural Perceptions and Social Values**
	1. I feel proud that my region has mangrove forests
Risk	**Risk Perception**
	1. Mangrove damage can threaten livelihoods
	2. Mangroves are important for reducing the risk of natural disasters
INT	**Intention to Support the Blue Economy**
	1. I intend to be part of the blue economy community
	2. I will support policies that encourage a blue economy
BEO	**Blue Economy Impact**
	1. Coastal communities' quality of life is increasing
	2. Coastal ecosystems are better protected

Source: Author

Furthermore, to identify the potential and challenges of mangrove management that supports *the blue economy,* this study compiles six key questions, namely

1. How does the perception of environmental sustainability affect the intentions and *outcomes* of the *blue economy?*
2. How does the perception of financial motivation affect the intentions and *outcomes* of the *blue economy?*
3. How does the perception of governance/institutions and community participation affect the intentions and *outcomes* of the *blue economy?*

4. How do cultural perceptions and social values affect the intentions and *outcomes* of the *blue economy?*
5. How does risk perception affect the intentions and *outcomes* of the *blue economy?*
6. How can the intention to participate mediate the influence of these factors on the *outcome* of the *blue economy*?

To answer these five key questions, this study uses a quantitative approach using *the Structural Modelling-Partial Least Squares* (SEM-PLS) method. SEM-PLS is a statistical technique used to test the relationship between latent variables and their forming indicators. This technique was chosen because of its ability to overcome complex models and large-scale data. The hypotheses built in this study are:

Table 2. Research Hypothesis

Indirect Influence	
H1	The perception of environmental sustainability affects the intention to support the blue economy
H2	Perception of financial motivation affects the intention to support the blue economy
H3	The perception of governance and community participation affects the intention to support the blue economy
H4	Cultural perceptions and social values influence the intention to support the blue economy
H5	Risk perception affects the intention to support the blue economy
Direct Influence	
H6	Perception of sustainability affects the *outcomes* of the blue economy
H7	Perception of financial motivation affects the *outcome* of the blue economy
H8	Perception of governance and community participation affects the *outcome* of the blue economy
H9	The intention to support the blue economy mediates the influence of environmental sustainability perception, financial motivation, community governance and participation, culture and social values, and risks to *blue economy* outcomes

Source: Author

RESULTS AND DISCUSSION

STATISTICAL RESULTS

In the SEM-PLS test, there are two components of analysis, namely *the cosntruct's measurement model* or *outer model* and *the structural model* or *inner model.* In the related literature, it is explained that the outer model shows how the relationship between construct variables and their forming indicators. That is, the analysis of this outer model shows how variables that cannot be measured directly (latent) are measured using variables that can be measured (manifest). While the inner model explains how the relationship between construct variables is. The following are the results of testing the outer and inner models in this study. Hair et al., (2022) (Demir & Uşak, 2025)

Outer Model

In general, there are three tests in the outer model, namely *outer loading, composite reliability, average variance extracted (AVE). (Pereira et al., 2024)* The following is presented table 3 to 5 for the test results.

Table 3. Outer *Loading Results*

Indicator	Leave variable	Outer Loading Value
ES_5	Environmental Sustainability Perception (ES)	1.00
AFM_7	Financial Motivation Perception (AFM)	0.85
AFM_9		0.65
GOV_3	Perception of Governance and Community Participation (GOV)	0.62
GOV_6		0.77
CP_3	Cultural Perceptions and Social Values (CP)	1.00
Risk_5	Risk Perception	0.62
Risk_10		0.83
INT_8	Intention to Support the Blue Economy (INT)	0.63
INT_9		0.89
BEO_7	Blue Economy Outcome (BEO)	0.60
BEO_9		0.00

Source: Author (processed with Smart-PLS)

Based on the table, the value of outer loadings for each indicator forming latent variables is obtained. Generally, the outer loading criterion is ≥ 70, which indicates a strong correlation between the manifest indicator and its latent contract. This means that the greater the contribution of the indicator to the latent variable (Hair et al., 2022). , however, empirically, *outer loadings* range from 0.50 to 0.60, especially in social studies with high complexity. Therefore, the value of the *outer loadings* can be considered valid under the conditions of other criteria, namely *composite reliability* ≥ 0.7 and *average variance extracted* ≥ 0.5. Thus, (Shela et al., 2023) *the outer loadings* for each indicator in this study are acceptable, which means that each of these indicators has a large and valid contribution in explaining its latent variables.

Table 4. Composite Reliability Results

Leave variable	Composite Reliability
Environmental Sustainability Perception (ES)	1.00
Financial Motivation Perception (AFM)	0.73
Perception of Governance and Community Participation (GOV)	0.70
Cultural Perceptions and Social Values (CP)	1.00
Risk Perception	0.70
Intention to Support the Blue Economy (INT)	0.74
Blue Economy Outcome (BEO)	0.79

Source: Author (processed with Smart-PLS)

Basically, *composite reliability* aims to measure the extent to which an indicator can consistently describe latent variables within the model. In other words, this value ensures the validity and consistency of the latent variable used. Thus, from table 4 above, it can be concluded that the latent variables used in this study are consistent and valid, because the CR value ≥ 0.7 (J. Hair & Alamer, 2022; Ringle & Straub, 2012) (J. F. Hair et al., 2022) .

Table 5. Average Variance Extracted (AVE) Results

Leave variable	Average Variance Extracted
Environmental Sustainability Perception (ES)	1.00
Financial Motivation Perception (AFM)	0.60

Perception of Governance and Community Participation (GOV)	0.50
Cultural Perceptions and Social Values (CP)	1.00
Risk Perception	0.54
Intention to Support the Blue Economy (INT)	0.60
Blue Economy Outcome (BEO)	0.70

Source: Author (processed with Smart-PLS)

The Average Variance Extracted (AVE) value indicates how much the indicators can explain the latent variable. The higher the AVE value ≥ 0.5, indicating the better the indicator is at measuring latent variables. From the table, the AVE value is greater than the criteria, meaning that the indicators that each latent variable has been able to explain well the variants in the latent variable.

Inner Model

Internal model testing aims to find out the relationship between latent variables. In other words, the inner model becomes the basis for the decision to accept or reject the research hypothesis. The inner model test is carried out after the evaluation of the outer model states that the latent variable is valid and reliable. The indicators of the inner model assessment are t-statistic and p-value. The results of the inner model of this study are as follows.

Table 6. Inner Model Results

Latent Variable Relationships		Hypothesis	Coefficients	Defiance Standard	T-Statistics	p-value
Indep	Dep					
EN	INT	H1 = ES affects INT	-0.11	0.05	2.00	0.04*
AFM	INT	H2 = AFM affects INT	0.09	0.06	1.35	0.17
GOV	INT	H3 = GOV affects INT	-0.17	0.05	2.92	0.00*
CP	INT	H4 = CP affects INT	0.13	0.05	2.47	0.01*
Risk	INT	H5 = Risk affects INT	-0.13	0.06	2.10	0.03*
EN	BEO	H6 = ES affects BEO	0.38	0.07	5.24	0.00*
AFM	BEO	H7 = AFM affects BEO	0.13	0.07	1.93	0.05**
GOV	BEO	H8 = GOV has an effect on BEO	-0.02	0.05	0.44	0.65
INT	BEO	H9 = INT affects BEO	-0.27	0.05	4.79	0.00*

Note: *sign 5%; **sign10%

Source: Author (processed with Smart-PLS)

Internal testing of the model shows the results of acceptance or rejection of the hypothesis. Based on these tables, the results were obtained:

- Accepting hypothesis 1, namely the perception of environmental sustainability affects the intention to support the blue economy, with a negative coefficient. These results indicate that the higher the public's perception of the importance of environmental sustainability, the lower their intention to support and participate in realizing the blue economy.
- Accepting hypothesis 3, namely the perception of governance/institutions affecting the intention to support the blue economy, with a negative coefficient. These results show that

the higher the perception related to governance/institutions and community participation, the lower their intention to support the realization of the blue economy

- Accepting hypothesis 4, namely cultural perception and social values affect the intention to support the blue economy, with a positive coefficient. Thus, it can be interpreted that the higher the perception of culture and social values possessed by a person, the higher his intention to be involved in realizing the blue economy in the area
- Accepting hypothesis 5, namely risk perception affects the intention to support the blue economy, with a negative coefficient. This means that the higher the perception of risk, the lower the intention to support the blue economy.
- Accepting hypothesis 6, where the perception of environmental sustainability affects blue economy outcomes, with a positive coefficient. This figure shows that the higher the perception of environmental sustainability, the greater the impact of the blue economy.
- Accepting hypothesis 7, where the perception of financial motivation affects blue economy outcomes, with a positive coefficient. This means that the higher the perception related to financial motivation, the greater the impact of the blue economy.
- Accepting the sembila hypothesis, where the intention to support the blue economy affects the outcome of the blue economy, with a negative coefficient. This indicates that the higher the public's intention to realize a blue economy, the lower the impact of the blue economy itself.

DISCUSSION

Environmental Sustainability Perception of Blue Economy Intentions and Impacts

Based on the internal model testing, it was found that the perception of environmental sustainability had a negative effect on the intention to support the blue economy. This means that when the community's understanding or knowledge regarding the benefits of planting and cultivating mangroves is high, it is not able to encourage their intention to support the blue economy, therefore, it is necessary to explore further regarding the factors that affect the community's intention to be actively involved in supporting the blue economy, especially through the planting and cultivation of mangroves in Kebumen.

First, there is skepticism about the effectiveness of the blue economy in society. Although the community understands and knows the concept of environmental sustainability, they consider that this understanding does not provide significant economic benefits. This means that the community views the benefits of planting and cultivating mangroves only as limited to ecology, in the form of environmental conservation and a form of preventing natural damage. In this case, they consider that mangrove planting does not provide additional income and improve quality of life, so they are less interested in participating in a mangrove-based economy. (Junwakil et al., 2025; Salampessy et al., 2021; Setiawan et al., 2017)

Second, the limited resources they have to participate in realizing a blue economy. This means that although respondents understand the concept of environmental sustainability, they are constrained by the lack of resources that support the realization of a blue economy. Such as limited access to capital and information, which ultimately makes the surrounding community not fully active in realizing the blue economy. The inability to turn environmental awareness into economic action can reduce interest in participating (Kamakaula et al., 2025) .

Third, limited knowledge about the blue economy can also be a catalyst for people to be involved in realizing a blue economy. Even though they understand what environmental sustainability is, there are still many people who do not understand the blue economy. This means that the public's understanding of the concept of sustainability is only ecological benefits, without any economic benefits that can be obtained. This year's inconsistency causes the community to be uninterested in running programs that support the blue economy.

Fourth, the mismatch between environmental values and economic motivation. In some communities, despite a high awareness of environmental importance, communities may be more affected by direct economic needs. If the blue economy is perceived more as an activity that does not directly provide economic benefits or is not relevant to their needs, then even though the perception of environmental sustainability is high, their intention to support the blue economy can be low. (Beselly et al., 2025b)

Furthermore, from the inner model test, it was found that the perception of environmental sustainability had a positive effect on blue economy outcomes. This means that the higher the public's understanding of environmentally friendly practices through mangrove planting, the greater the impact of the blue economy such as improving the quality of life and coastal preservation will be felt by the surrounding community. The existence of a high awareness of the importance of sustainable development in the community, in turn, encourages them to invest in the form of natural resource management that provides sustainable economic benefits. Thus, people who are aware of the importance of planting and cultivating mangroves for coastal stability and reducing the risk of natural disasters will view the blue economy as potentially generating long-term economic benefits.

Perceptions of Financial Motivation for Blue Economy Outcomes

The perception of financial motivation refers to the extent to which the community allows mangrove planting and cultivation to be an alternative source of income and business diversification. In many studies, it has been explained that mangroves can be used as products with selling value, ecotourism and derivative products such as handicrafts and fuel (Arifanti et al., 2022; Pham et al., 2022) . The perception that mangroves can be a new source of income will encourage coastal communities to view mangroves not only as plants that function ecologically, but also as an economic asset that can be an additional income (Kristiningrum et al., 2022; Malik et al., 2025)

Departing from financial motivation to encourage business diversification and the use of technology is directly related to improving the quality of life of coastal communities. Communities that can utilize mangrove resources to create wider economic opportunities will have better access to a variety of more prosperous lives (higher incomes, more stable jobs, access to education, better health facilities). This shows that the blue economy can create a better life for coastal communities if they are empowered to utilize mangroves sustainably.

Perception of Governance/Institutions and Community Participation in the Intention to Support the Blue Economy

Based on the internal model testing, the perception of governance/institutions and community participation has a negative coefficient to the intention to support the blue economy. This indicates that the better the governance and participation of the community, the lower their desire to realize a blue economy. The findings are due to several factors, such as

- The complexity of policies or rules that reduce individual motivation in carrying out blue economy programs. Although a community may have formal mangrove management rules, sometimes they are too complex, inconsistent, or do not provide enough economic incentives for individuals. In this context, the perception that governance is "too complicated" or "bureaucratic" can diminish the desire of individuals to realize a blue economy.
- Community participation that is required to be too formal and structural without social control will lead to a reluctance to participate in realizing a blue economy. This occurs when community participation is manifested in a highly structural or top-down form, for example people are invited to "report" or "supervise", but are not given real control, incentives, or alternative access to economic benefits. When participation is perceived only as a "moral responsibility" or "social burden/surveillance", rather than as an economic opportunity, then individual motivation to participate in the blue economy can decline. (Ahmed et al., 2023)

Cultural Perceptions and Social Values on Intentions to Support the Blue Economy

Based on the testing of the inner model, cultural perception and social values are supporting factors in realizing a blue economy in the coastal area of Kebumen Regency. This relationship is caused by several aspects, such as:

- Mangroves as culture and identity. This means that when coastal communities see mangrove forests as part of the community's identity and become a "cultural heritage", "ancestral home", or part of a collective identity, this will foster a *sense of* belonging and social responsibility to maintain the sustainability of the ecosystem. Local pride in the existence of mangroves makes the community more motivated to protect and manage mangroves sustainably, because the success of mangrove preservation is considered part of the community's honor. Thus, this cultural perception and social value becomes a strong social (Asbi & Rauf, 2019) *capital* to support a mangrove-based blue economy, because people not only see mangroves as an economic source, but also as part of their collective identity and shared heritage.
- Mangroves as a culture and social value are the basis for mediating horizontal conflicts. In many coastal communities, social values and local wisdom underlie informal rules in utilizing natural resources, including mangroves. Communities that have high cultural value for mangroves often prioritize the principles of sustainability, mutual cooperation, benefit sharing, and the prohibition of excessive exploitation. This condition allows them to see the blue economy not as mere exploitation, but as an "ethical" use, in line with the social values of the community.

Risk Perception on Intention to Support the Blue Economy

Based on the internal model test, it was found that risk perception has a negative coefficient on the community's intention to support the blue economy. This means that the more the community understands the risk of mangrove damage, the less the community's intention to support the blue economy will actually decrease. This can be caused by several factors, such as:

- Pessimism about the future has led to increasingly heavy economic pressure. When people have the perception that the mangroves in their area have been damaged a lot, or that the mangrove ecosystem is difficult to restore, this can lead to a sense of despair or skepticism about the economic opportunities of mangroves. The perception that "mangroves are already damaged and can no longer be relied on to provide benefits" makes individuals hesitant to engage in mangrove-based blue economy ventures, as they consider the business risks to be too great and long-term benefits are not guaranteed. In this case, risk perception dampens the intention to invest time, effort, or capital into mangrove-based activities. (Nyangoko et al., 2020)
- There are concerns about uncertainty from the ecological and economic sides. Risk perception in the context of mangroves can also include concerns about natural disasters, climate change, abrasion, or environmental damage that are increasingly common. If people feel that mangroves, although protected, remain vulnerable, then they can see the blue economy as something unstable, rather than a safe long-term investment. This uncertainty can lower the intention to get involved.

Intention to Support the Blue Economy to Blue Economy Outcomes

Based on the internal model testing, it was found that the higher the intention to support the blue economy, the lower the impact obtained from the blue economy. This means that even if a person or community has a desire to support the blue economy, the realization of that intention can be hampered by several factors, such as

- Structural barriers and inadequate socio-economic capital, resulting in a gap between intention and realization. This gap is caused by several things, such as:
    - Limited financial resources, market access, competencies and infrastructure.
    - Economic uncertainty and risks, such as market fluctuations, natural disasters, land degradation and land use conflicts that make people reluctant to invest money/time, so that blue economy outcomes will be difficult to achieve
    - Absence of effective behavioral control. to carry out actions in real terms.
- Although conceptually and theoretically intentions in favor of a blue economy should be a positive first step, findings from the literature and empirical facts suggest that intentions alone are not enough without structural, institutional, and resource support, outcomes can be delayed or even fail. Therefore, in designing policies or research on a mangrove-based blue economy, it is important to take into account the gap between intention and realization, as well as ensure the mechanisms that enable intentions can be translated into real action and produce expected outcomes

CONCLUSION

Based on the results of *the outer model* and *inner model* tests in this study, it can be concluded that the measurement model shows quite reliable and valid results. Most latent constructs have a high *outer loading*, with *composite reliability* and *average variance extracted* (AVE) values that meet the standard. This means that the indicators used to measure the construct are of good quality.

Furthermore, based on the analysis of the inner model, it was obtained that the intention to support the blue economy did not make the impact of the blue economy even greater. Similarly, perceptions of environmental sustainability, perceptions of governance/institutions and community participation, and risk perceptions are inhibiting factors in realizing a blue economy in the coastal area of Kebumen. On the contrary, cultural perceptions and social values are supporting factors in realizing a blue economy. The perception of environmental sustainability and financial perception can increase the impact of the blue economy felt by coastal communities.

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