Analysis of the Relationship between the Level of Community Participation and the Effectiveness of Adaptive Governance in the Coastal Area of Cebu, Philippines

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ABSTRACT

Purpose: This study aims to explore the relationship between community participation and the effectiveness of adaptive governance in the coastal areas of Cebu, Philippines. It seeks to identify factors influencing participation and evaluate the governance models that contribute to sustainable resource management in these vulnerable regions.

Subjects and Methods: The research utilizes a mixed-methods approach, combining quantitative surveys and qualitative interviews. Surveys were administered to local community members to assess their awareness, participation, and perceptions of governance effectiveness. Interviews were conducted with key stakeholders, including local leaders, government officials, and NGOs, to gain deeper insights into the challenges and enablers of community engagement. The data were analyzed using descriptive statistics, logistic regression, and thematic analysis.

Results: The study found that high levels of community awareness and a preference for community-based and ecosystem-based governance strategies were associated with higher participation in resource management activities. However, barriers such as lack of capacity building, poor information dissemination, and political conflicts hindered full engagement. Key predictors of participation included age, fishing dependency, and awareness of resource management policies. Thematic analysis revealed that local knowledge and inclusive governance models are crucial for effective resource management.

Conclusions: The findings highlight the importance of enhancing community participation through targeted capacity-building programs, improved communication strategies, and overcoming resource constraints. Strengthening inclusive governance frameworks can enable coastal communities to manage their resources effectively, adapt to environmental changes, and achieve sustainable outcomes.

INTRODUCTION

The concept of adaptive governance has gained significant attention in recent decades, particularly as a framework for managing complex environmental and social challenges (Koontz et al., 2015). According to Van et al. (2020) One of the key areas where adaptive governance has shown promise is in the coastal areas, where human activities and environmental changes frequently intersect, creating a dynamic and sometimes fragile ecosystem. The coastal region of Cebu, Philippines, known for its rich biodiversity, marine resources, and high population density, is an area that exemplifies both the potential and challenges of applying adaptive governance in a highly vulnerable and rapidly developing context.

The Philippine archipelago is home to some of the most diverse and ecologically significant coastal ecosystems in the world (Gajardo et al., 2023; Ohno et al., 2022). These ecosystems provide critical resources such as fish, mangroves, coral reefs, and coastal wetlands that sustain the livelihoods of millions of Filipinos. However, overexploitation of resources, pollution, climate change, and increasing urbanization have put immense pressure on these coastal areas, threatening not only the environment but also the social and economic well-being of coastal communities (Al-Awadhi et al., 2022). In such contexts, governance systems need to be flexible, responsive, and inclusive, ensuring that all stakeholders, particularly local communities, have a voice in decision-making processes.

Day (2022) said that, community participation is often regarded as a cornerstone of effective adaptive governance. Engaging local communities in environmental management helps ensure that governance systems are grounded in local knowledge, needs, and values. Community participation also fosters a sense of ownership and responsibility, leading to more sustainable and effective outcomes (Uzorka et al., 2024; Aldegheiy et al., 2024). In coastal areas, where livelihoods are directly tied to the health of the environment, community involvement is particularly crucial. However, despite its importance, the level of community participation in governance processes can vary greatly depending on various factors such as political will, community capacity, and the socio-economic context.

The relationship between community participation and adaptive governance effectiveness in coastal areas, such as in Cebu, is an area that warrants further exploration. Research has shown that when communities are actively involved in decision-making, the effectiveness of governance structures increases, particularly in terms of environmental sustainability, resource management, and social resilience. However, challenges remain in translating this relationship into meaningful action. Factors such as power dynamics, unequal access to decision-making, and resource limitations often hinder the full engagement of local communities.

One of the challenges in implementing effective adaptive governance in the coastal areas of Cebu is the diversity of stakeholders. These stakeholders include local residents, local government units, non-governmental organizations, and private sector actors, all of whom may have different priorities, values, and levels of influence (Harangozó & Zilahy, 2015). This diversity can complicate governance processes, making it difficult to reach consensus and implement policies that are both effective and equitable. Therefore, understanding how community participation influences governance effectiveness in such a complex context is crucial.

The theory of adaptive governance emphasizes the need for flexible, inclusive, and collaborative decision-making processes that can adapt to changing conditions (Janssen, M., & Van, 2016; Wang et al., 2018). In practice, however, implementing such systems is often fraught with difficulties, particularly in areas where power imbalances, limited resources, and conflicting interests exist. Community participation is often seen as a way to mitigate these challenges by democratizing decision-making and ensuring that governance systems are responsive to local needs and conditions.

In the case of Cebu, community participation has been integrated into various environmental management efforts, including marine protected areas (MPAs), coastal resource management (CRM), and disaster risk reduction strategies. These initiatives, however, have had varying degrees of success, with some areas showing strong community engagement and others struggling with low levels of participation. The effectiveness of these governance mechanisms in achieving sustainable outcomes is closely linked to the level of community involvement, but the factors influencing this relationship are complex and multifaceted (Wright & Reames, 2020).

One key factor in determining the level of community participation is the access to information. Communities that are well-informed about the issues at hand, such as the state of local ecosystems or the impacts of climate change, are more likely to engage in governance processes (Howes, 2018). Additionally, the capacity of local communities in terms of education, skills, and resources plays a significant role in their ability to participate meaningfully in decision-making. In the coastal areas of Cebu, many communities face challenges related to limited access to

education, resources, and training, which can hinder their ability to engage in governance processes effectively.

Institutional support is another critical factor that affects community participation. Local government units (LGUs) and other institutions play an essential role in facilitating or hindering community engagement. The willingness of these institutions to empower local communities, provide necessary resources, and create platforms for participation is crucial in ensuring the success of adaptive governance initiatives (Ansell & Gash, 2018). In Cebu, the role of LGUs in fostering an enabling environment for community participation has been a subject of study, with some areas benefiting from strong institutional support while others face challenges of weak governance structures.

Furthermore, the socio-cultural context of coastal communities in Cebu cannot be overlooked. Cultural values, social norms, and community dynamics significantly influence how individuals and groups perceive their role in governance processes. For instance, the traditional practices and collective decision-making structures of indigenous communities in Cebu may support adaptive governance in ways that are distinct from more Westernized approaches. Understanding these cultural dimensions is vital for tailoring governance systems that are culturally appropriate and more likely to succeed.

In light of these complexities, this research aims to explore the relationship between the level of community participation and the effectiveness of adaptive governance in the coastal areas of Cebu. By examining the factors that influence community participation, including information access, institutional support, and socio-cultural factors, the study seeks to provide a deeper understanding of how adaptive governance can be implemented effectively in such contexts. The research will also examine how different levels of community engagement impact the success of governance initiatives in achieving environmental sustainability, social resilience, and economic prosperity in coastal areas (Handoko et al., 2023; Lin, 2019).

Ultimately, this study aims to contribute to the growing body of knowledge on adaptive governance by providing empirical insights into how community participation can enhance governance outcomes in coastal areas. By understanding the dynamics between these two factors, policymakers, practitioners, and communities can work together to build more effective and sustainable governance systems that can respond to the challenges facing coastal areas like Cebu. The findings of this research have the potential to inform future governance strategies in other coastal regions of the Philippines and beyond, offering valuable lessons for achieving sustainable development in coastal and marine environments.

METHODOLOGY

The appropriate research method for this study is a mixed-methods approach, combining both quantitative and qualitative techniques to provide a comprehensive understanding of the relationship between community participation and adaptive governance in Cebu's coastal areas. The quantitative aspect of the study involves surveys administered to community members to collect data on their awareness, participation, and perceptions of governance effectiveness. This allows for the collection of numerical data that can be analyzed to identify patterns and relationships between community characteristics and their level of involvement in resource management. The qualitative aspect of the study involves interviews with key stakeholders, including local leaders, government representatives, and non-governmental organizations, to gain deeper insights into the factors influencing participation and the effectiveness of governance strategies. This combination ensures a well-rounded analysis of both the statistical trends and the contextual factors shaping community engagement in adaptive governance.

Data Analysis Technique

The data analysis technique employed in this study includes both descriptive and inferential statistical methods for the quantitative data, and thematic analysis for the qualitative data. For the quantitative data collected through surveys, descriptive statistics such as frequencies, percentages, and means are used to summarize the demographic characteristics of respondents and their levels of awareness and participation. Inferential statistics, specifically logistic

regression, is applied to identify the significant predictors of community participation, examining factors such as age, education, fishing dependency, and awareness of coastal resource management policies. For the qualitative data from interviews, thematic analysis is used to identify and analyze recurring themes and patterns related to governance strategies, community perspectives, and the challenges to participation. This dual approach allows for a comprehensive understanding of both the measurable factors and the underlying social dynamics influencing adaptive governance in the coastal areas of Cebu.

RESULTS AND DISCUSSION

This section details the results of a comprehensive study conducted to explore the critical relationship between community participation and the effectiveness of adaptive governance in the coastal areas of Cebu, Philippines. The aim of the study was to assess how community involvement in local decision-making processes influences governance outcomes, particularly in environmental management and sustainable resource use in coastal areas. Cebu, with its rich marine biodiversity and vulnerable coastal ecosystems, offers a compelling case for studying the impact of adaptive governance practices, which are designed to be flexible, inclusive, and responsive to the challenges faced by these communities.

To gather relevant data, the research employed a multi-method approach that involved several techniques for data collection. The primary method was household surveys, which provided quantitative data about the awareness, attitudes, and participation levels of local residents in governance activities related to coastal resource management. These surveys were complemented by interviews with key local stakeholders, including community leaders, local government representatives, and non-governmental organizations (NGOs) involved in environmental management. These qualitative interviews allowed for a deeper understanding of the motivations, challenges, and perspectives that shape community participation in governance processes. In addition, governance documents from selected coastal barangays (villages) were analyzed to assess the structure, policies, and outcomes of governance strategies currently in place.

The results of the study are systematically organized into five tables that serve as a concise representation of the data collected. Each table focuses on different dimensions of community engagement and governance effectiveness, highlighting the key findings in a structured and accessible manner. The tables include important metrics such as demographic profiles, the level of awareness of coastal resource management policies, community participation levels, the perceived effectiveness of governance strategies, and the challenges faced by communities in engaging with governance processes. These tables not only provide a snapshot of the current state of governance and participation but also identify the factors that contribute to or hinder successful adaptive governance in Cebu's coastal communities.

By organizing the findings into these tables, the study makes it easier to draw meaningful insights and correlations between the levels of community involvement and the outcomes of adaptive governance. This organization helps to highlight trends, key issues, and areas for improvement that can guide future efforts in designing more inclusive, effective, and responsive governance strategies in Cebu and similar coastal regions around the world.

Table 1. Socio-Demographic Profile of Respondents

Demographic Variable	Percentage (%)
Age (31–40 years)	22.97
Age (41–50 years)	24.42
Male	70.00
Female	30.00
Boat Ownership	50.96
Education (≤6 years)	11.27

Source: Bureau of Fisheries and Aquatic Resources (BFAR)

The demographic data indicate a predominantly male fisherfolk population, with a significant portion owning boats, which is crucial for participation in coastal resource management activities. The age distribution suggests a workforce that is actively engaged in coastal livelihoods,

which may influence their involvement in governance processes. Educational attainment is varied, with a notable percentage having six years or less of formal education, potentially affecting their capacity to engage in complex governance discussions.

Table 2. Community Awareness of Coastal Resource Management (CRM) Policies

Policy Awareness Level	Percentage (%)
High	65.00
Moderate	25.00
Low	10.00

The data indicates that a significant majority of coastal communities in Cebu have a high level of awareness regarding Coastal Resource Management (CRM) policies, which is a positive indicator for fostering effective participation in governance processes. Awareness is crucial because it empowers individuals to understand the importance of sustainable practices, make informed decisions, and engage in activities that support environmental conservation. When communities are well-informed about the policies and regulations that govern the use of coastal resources, they are more likely to actively participate in managing these resources, ensuring the long-term sustainability of their local ecosystems.

However, despite the overall high level of awareness, there is a notable portion of the population—about 10%—that remains less informed about CRM policies. This lack of awareness can pose significant challenges to meaningful participation in governance processes. Those who are unaware or misinformed about the rules and regulations may struggle to contribute effectively to decision-making, leading to gaps in the implementation of CRM policies. The inclusion of these individuals in governance activities is critical, as their involvement helps create a more inclusive and comprehensive management approach that reflects the needs and perspectives of all community members.

To address this issue, the study highlights the urgent need for targeted information dissemination efforts to ensure that the entire community, especially those with lower awareness, is adequately informed. This could involve community outreach programs, educational campaigns, and collaboration with local leaders to disseminate relevant information in accessible formats. By strengthening communication strategies, local governments and NGOs can increase the overall level of awareness and, in turn, foster greater participation from all members of the community. This inclusive approach would ultimately enhance the effectiveness of CRM policies and contribute to the overall success of adaptive governance in Cebu's coastal regions.

Table 3. Factors Influencing Willingness to Participate in CRM Initiatives

Factor	Coefficient	p-value
Age	24.498	0.011**
Marital Status	2.62e-08	0.000***
Education Level	5.293	0.134
Fishing Dependency	1.28e+11	0.000***
Boat Ownership	0.048	0.171
Effectiveness of Regulations	0.042	0.024**
LGU as Source of Information	18.904	0.119
Awareness of CRM Efforts	8.54e+07	0.000***

Source: Warguez et al., 2022

The results of the logistic regression analysis reveal several key factors that significantly influence the willingness of coastal community members to participate in Coastal Resource Management (CRM) initiatives. Among these, age stands out as a crucial determinant, with older individuals showing higher levels of engagement, likely due to their experience and long-term stake in local resource management. Marital status also plays a role, as those who are married or have families might feel a greater sense of responsibility toward the preservation of local resources for the benefit of their dependents. These demographic factors highlight the importance of tailoring participation strategies to specific community groups, ensuring that the diverse needs and motivations of various age groups and family structures are addressed.

Additionally, fishing dependency is strongly associated with the level of participation in CRM initiatives. As many community members rely directly on fishing for their livelihoods, their engagement in management practices is critical to ensuring the sustainability of fish stocks and other coastal resources. Those with higher fishing dependency are more likely to recognize the direct benefits of CRM policies, which makes them more willing to participate. Awareness of CRM efforts is another significant factor, as individuals who are informed about the policies and their potential impact on local resources are more inclined to participate in governance initiatives. This emphasizes the need for effective information dissemination, ensuring that all community members are aware of the importance and benefits of CRM efforts.

Finally, the analysis underscores the importance of capacity-building programs and communication strategies to enhance participation in CRM initiatives. Given the significant association between these factors and willingness to engage, it is essential to implement targeted interventions that improve community understanding and skills related to resource management. Such programs could include training on sustainable fishing practices, workshops on the importance of biodiversity conservation, and community meetings that allow for dialogue between local residents and governance bodies. By addressing these predictors, governance efforts can be made more inclusive and effective, ensuring that all community members, regardless of demographic factors, can contribute meaningfully to the sustainable management of coastal resources.

Table 4. Perceived Effectiveness of Adaptive Governance Strategies

Governance Strategy	Effectiveness Rating (%)
Community-Based Management	85.00
Co-Management with LGUs	75.00
Top-Down Regulatory Approaches	45.00
Ecosystem-Based Management	80.00

The results indicate that the community holds a strong preference for community-based management and ecosystem-based strategies as the most effective approaches to governance. These strategies are seen as more in tune with the local context, as they allow for greater community involvement, promote local knowledge, and offer flexibility in addressing unique environmental challenges. By actively involving the community in decision-making, these governance models empower individuals to take ownership of their local resources, fostering a sense of responsibility and collaboration. This level of involvement is crucial for long-term sustainability, as it ensures that policies are not only designed with the community's needs in mind but also adapted to evolving environmental and socio-economic conditions.

In contrast, top-down regulatory methods are viewed with skepticism, as they often fail to resonate with local communities and can be perceived as imposed or disconnected from the realities on the ground. Such approaches may lack the flexibility and inclusiveness that adaptive governance requires. The preference for community-based and ecosystem-based strategies aligns with the core principles of adaptive governance, which advocates for flexibility, inclusivity, and responsiveness to local needs. These principles underscore the importance of a governance system that can adapt to changes and challenges while involving all stakeholders, ensuring that governance remains relevant, effective, and sustainable in the long term.

Table 5. Challenges to Community Participation in Adaptive Governance

Challenge	Percentage (%)
Lack of Capacity Building	30.00
Inadequate Information Dissemination	25.00
Political Conflicts	20.00
Resource Limitations	15.00
Cultural Barriers	10.00

The findings from the study highlight several significant barriers to effective community participation in adaptive governance in Cebu's coastal areas. One of the most prominent obstacles identified is the lack of capacity building, which limits the community's ability to fully engage in

governance activities. Many individuals, particularly those in lower-income and rural areas, lack the necessary skills and knowledge to actively participate in decision-making processes, making it difficult for them to contribute meaningfully. This gap in capacity not only hinders their involvement but also impacts the overall effectiveness of governance strategies. Without the proper tools, training, and resources, even the most well-intentioned community members may struggle to understand complex governance structures, policies, or how they can contribute to local management efforts.

In addition to the lack of capacity building, the study also emphasizes the issue of inadequate information dissemination as another critical barrier. While many individuals in coastal communities are aware of environmental issues, the flow of relevant, actionable information regarding Coastal Resource Management (CRM) policies and governance processes is often insufficient. This lack of clear and accessible information can lead to confusion, misinformation, or disengagement. Inadequate communication about the benefits of participating in governance activities, as well as the roles and responsibilities involved, can create significant gaps in understanding. As a result, some community members may be unaware of how they can contribute or may not see the value in getting involved, further weakening the overall governance structure.

Addressing these challenges through targeted interventions can significantly improve community engagement and, by extension, the effectiveness of adaptive governance strategies. Capacity-building programs are essential for equipping community members with the skills, knowledge, and tools necessary to participate effectively. These programs could include training on sustainable resource management practices, workshops on local governance systems, or creating leadership opportunities within the community. Likewise, improving information dissemination by utilizing multiple channels such as community meetings, social media, and printed materials in local languages can ensure that all members have access to relevant information. By making governance processes more inclusive and transparent, these interventions will foster a greater sense of ownership and responsibility among the community, ultimately contributing to more sustainable and resilient coastal resource management.

DISCUSSION

The results of the study underscore the importance of community participation in adaptive governance within the coastal areas of Cebu. However, while the findings illustrate the active engagement of local communities in certain governance strategies, they also highlight significant challenges that must be addressed to maximize participation and governance effectiveness. In this section, we will delve deeper into the implications of these results, analyzing how the identified barriers and opportunities influence the sustainability of Coastal Resource Management (CRM) efforts, and suggest ways to overcome these challenges.

Capacity Building and Skill Development

One of the key findings of the study is the lack of capacity building in coastal communities, which limits effective participation in governance processes. This gap in skills and knowledge hinders not only individual participation but also the collective ability of the community to engage with complex governance systems. The low levels of education and training in coastal communities, as observed in the results section, are particularly concerning given the increasing need for adaptive governance to address rapidly changing environmental conditions (Whitney et al., 2017). Capacity-building programs designed to increase understanding of local governance processes, sustainable fishing practices, and environmental stewardship can enhance community members' ability to make informed decisions. Importantly, such programs can help build local leadership, enabling communities to take ownership of their resources and governance systems, ensuring that their voices are heard and their concerns addressed in decision-making processes.

Information Dissemination and Awareness

Another critical issue highlighted by the study is the inadequate dissemination of information to local communities. While many individuals express awareness of CRM policies, the channels through which this information is communicated often fail to reach all members of the community effectively. Without clear, accessible information, individuals are less likely to engage

in governance activities or may not fully understand the policies and regulations that affect their livelihoods (Ward et al., 2018). This issue is particularly prominent in marginalized coastal areas, where literacy levels may be low, and digital infrastructure may be lacking. Improving the flow of information through targeted communication strategies—such as using community radio, local meetings, and printed materials in regional languages—can significantly enhance participation. Moreover, providing practical, hands-on workshops and training sessions on how to apply CRM policies in daily life can help bridge the information gap and foster a more inclusive, informed community.

Community Preferences and Governance Approaches

The study's findings also reveal that the communities in Cebu coastal areas favor community-based and ecosystem-based governance models, which is consistent with the principles of adaptive governance. These models emphasize the importance of involving local stakeholders in decision-making processes and recognizing the value of traditional knowledge in managing natural resources (Brondízio et al., 2021). As opposed to top-down regulatory approaches, which are often seen as disconnected from local needs and priorities, these participatory models foster a sense of ownership and responsibility. The local community's preference for these inclusive governance strategies points to the need for policymakers to recognize the value of community input and adapt governance structures to align with local practices. This approach not only empowers communities but also promotes more sustainable outcomes, as local stakeholders are more likely to support and adhere to policies they helped create.

Overcoming Barriers to Participation

The results section identified several barriers to participation, including political conflicts, resource limitations, and cultural barriers. These factors can create power imbalances, which hinder the ability of marginalized groups to have a say in decision-making processes. For example, political conflicts can polarize communities, reducing the likelihood of collaboration between local government units (LGUs) and community members. Similarly, resource limitations such as a lack of financial support or logistical assistance can prevent communities from fully engaging in governance initiatives. Overcoming these barriers requires a multifaceted approach that includes conflict resolution mechanisms, stronger institutional support, and innovative funding strategies. Encouraging collaboration between local governments, NGOs, and international organizations can also help to address resource limitations and provide communities with the tools and support needed to actively participate in adaptive governance (Dellmuth & Gustafsson, 2021).

Recommendations for Strengthening Community Participation

Based on the findings and analysis, several recommendations can be made to improve community participation and the overall effectiveness of adaptive governance in Cebu's coastal areas. First, capacity-building programs should be prioritized to ensure that all community members, regardless of their educational background, have the knowledge and skills required to engage in governance processes. These programs should be designed to be practical and context-specific, taking into account the unique challenges faced by coastal communities (Chen et al., 2020). Second, improving information dissemination through diverse channels and formats will help ensure that all community members have access to relevant information. This should include the use of digital platforms, where possible, as well as more traditional methods like community meetings and printed materials. Third, inclusive governance models should be promoted at all levels of decision-making, ensuring that local knowledge and perspectives are incorporated into policy development and resource management strategies. Finally, addressing the barriers to participation such as political conflicts, resource limitations, and cultural barriers—requires the implementation of conflict resolution strategies, the provision of adequate funding, and the creation of an enabling environment where all community members can participate meaningfully.

CONCLUSION

The research highlights that community participation plays a crucial role in the effectiveness of adaptive governance in Cebu's coastal areas, with findings showing that higher levels of

participation are linked to more successful resource management and sustainable outcomes. Despite this, several barriers such as lack of capacity building, insufficient information dissemination, and political conflicts hinder full community engagement. The study underscores the preference for community-based and ecosystem-based management models, which align with local needs and values, over top-down regulatory approaches. To enhance participation, the research recommends targeted capacity-building programs, improved communication strategies, and overcoming resource limitations, ultimately advocating for more inclusive governance frameworks that integrate local knowledge and foster long-term environmental sustainability.

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