

Examining the Correlation Between Management Strategies of Real Estate Developers and Community Resilience in Batangas City: Basis for Sustainable Development and Disaster Preparedness

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ABSTRACT

This study examines the relationship between real estate developers' management strategies and the resilience of communities in Batangas City, with a focus on sustainable development and disaster preparedness. The research investigates five key management strategies: sustainable design and construction, disaster preparedness and mitigation, community engagement, regulatory compliance, and risk assessment and management. It also evaluates the impact of these strategies on community resilience, specifically in terms of disaster response and recovery, social cohesion, infrastructure resilience, economic resilience, and the sustainability of livelihoods. Data were collected through surveys administered to real estate developers and community members. The findings reveal that while real estate developers in Batangas City are implementing strategies that strengthen community resilience, particularly in infrastructure and disaster recovery, there is room for improvement in supporting economic resilience and social cohesion. The study emphasizes the importance of integrating disaster preparedness into real estate development and recommends policy interventions to foster collaboration among developers, local authorities, and communities for sustainable, resilient urban development.

Keywords: *Management Strategies; Real Estate Developers; Community Resilience; Disaster Preparedness; Sustainable Development*

INTRODUCTION

The increasing frequency and severity of natural disasters, especially flooding and storms, have amplified the need for resilient urban communities. In many flood-prone cities, sustainable real estate development and disaster-resilient infrastructure play a critical role in reducing vulnerability and enhancing long-term community safety. Research on urban flood resilience suggests that integrated planning, structural mitigation measures, and community-based disaster risk reduction are essential to strengthen community resilience (Brown, 2024). Developers of real estate projects, therefore, hold a significant responsibility: their design and management strategies can influence not only the durability of buildings but also the capacity of communities to respond to, recover from, and adapt to disasters.

In the context of Batangas City, these dynamics are especially relevant: as urbanization continues, communities are increasingly exposed to environmental hazards such as floods and typhoons. If developers adopt sustainable design and construction, incorporate disaster-preparedness measures, ensure regulatory compliance, and engage communities in planning, they can contribute significantly to building resilient neighborhoods. Community resilience encompasses more than just physical infrastructure it includes social cohesion, livelihood sustainability, economic stability, and institutional capacity for disaster response and recovery. Recent studies highlight that resilience-building must occur at both structural (infrastructure, risk-proofing) and social (community participation, preparedness) levels to be effective (Johnson & Miller, 2023).

This study aims to examine the relationship between real estate developers' management strategies and community resilience in Batangas City. By focusing on sub-dimensions such as sustainable construction, disaster mitigation strategies, community engagement, regulatory compliance, and risk assessment, the research seeks to uncover which developer practices are most strongly associated with resilience outcomes. The outcomes measured include disaster response and recovery capacity, infrastructure resilience, social cohesion and support networks, economic resilience, and livelihood sustainability. Through this analysis, the study aims to provide evidence-based recommendations for developers, local authorities, and community stakeholders to foster sustainable, disaster-resilient urban development.

LITERATURE REVIEW

Digital marketing has become an indispensable component of modern real estate operations. The increasing frequency and intensity of natural disasters, especially floods and storms, have highlighted the importance of urban resilience. Urban flood resilience refers to the ability of cities to absorb and recover from the impacts of flooding and other natural hazards. Research suggests that integrated planning, structural mitigation measures, and community-based disaster risk reduction are essential to strengthening community resilience (Smith et al., 2021). These measures play a vital role in reducing vulnerability and improving recovery time, especially when cities are exposed to frequent climate risks (Walker et al., 2022). Without a comprehensive strategy that combines both physical infrastructure and social structures, urban communities will remain highly susceptible to disaster-related impacts.

Sustainable real estate development practices have become critical in fostering disaster-resilient urban communities. Developers are increasingly focusing on using eco-friendly materials, energy-efficient designs, and flood-resistant infrastructure to mitigate risks posed by natural disasters (Brown et al., 2023). These sustainable development practices are essential for creating environments that can endure extreme weather conditions, while also reducing carbon footprints and promoting long-term sustainability (Anderson et al., 2022). By incorporating these practices, real estate developers ensure that communities are better equipped to handle natural disasters, thus enhancing both community resilience and environmental stewardship.

Community engagement has emerged as a key element in strengthening resilience within urban settings. Developers who involve local communities in the planning and decision-making processes improve disaster preparedness and response outcomes (Moore et al., 2021). Community engagement not only fosters a sense of ownership and responsibility but also ensures that residents' needs and priorities are reflected in development plans, thereby enhancing the overall effectiveness of disaster risk reduction efforts (Martin et al., 2022). When communities actively participate in resilience-building, they develop stronger social networks, enabling them to respond more effectively to disasters.

Regulatory compliance is crucial to ensuring that real estate developments are both safe and resilient to natural disasters. Compliance with environmental sustainability laws and local building codes ensures that developments are built to withstand extreme events such as floods and storms (Taylor et al., 2021). Ethical practices, such as transparency in dealings with local authorities and residents, further support resilience efforts by fostering trust and collaboration between developers and communities (Robinson et al., 2023). By adhering to these standards, developers help build communities that are better equipped to adapt to and recover from the challenges posed by natural disasters.

MATERIALS & METHODS

This study used a quantitative research design, specifically a descriptive-correlational approach, to examine the relationship between the management strategies of real estate developers and community resilience in Batangas City. The independent variable, Management Strategies of Real Estate Developers, included sub-dimensions such as sustainable design, disaster preparedness, and community engagement, while the dependent variable, Community Resilience, encompassed aspects like disaster response, infrastructure resilience, and economic recovery. The objective was to determine how these strategies contribute to building resilient, sustainable communities capable of withstanding and recovering from natural disasters.

Respondents

The respondents for this study were real estate developers and community members in Batangas City. The developers selected were licensed professionals actively involved in real estate projects that integrate sustainability and disaster risk reduction strategies. In addition, community members from areas directly affected by real estate developments were included to capture their perspectives on the resilience of local infrastructure, economy, and social networks. Purposive sampling was employed to ensure that the participants had experience with disaster preparedness strategies, community engagement efforts, and the implementation of sustainable building practices in their respective roles.

Data Gathering Procedure

Data were collected through an online survey targeting both real estate developers and community residents. The survey was designed to capture responses on the management strategies implemented by real estate developers and the levels of community resilience perceived by residents. The survey included Likert-scale questions for each sub-dimension of the variables, measuring aspects such as the use of eco-friendly materials, flood-resistant infrastructure, community participation in planning, and the effectiveness of local disaster response strategies. Both developers and residents provided their assessments on the perceived impacts of these strategies on community resilience and sustainability.

Statistical Analysis

The data were analyzed using descriptive statistics, including means and standard deviations, to evaluate the general trends in developers' management strategies and the community's resilience. Pearson's correlation analysis was used to assess the strength and direction of relationships between management strategies and the sub-dimensions of community resilience. Furthermore, regression analysis was conducted to determine the predictive power of specific management strategies, such as disaster preparedness and risk assessment, for community resilience outcomes, including infrastructure resilience and economic recovery. The results aimed to identify the most significant strategies for building resilient communities in Batangas City, particularly in the context of disaster preparedness and sustainable development.

RESULTS AND DISCUSSION

The overall mean of 3.47 for Sustainable Design and Construction indicates that real estate developers in Batangas City are highly committed to incorporating eco-friendly materials and energy-efficient features into their projects. This reflects a strong trend toward sustainable construction practices, which is critical in mitigating the environmental impact of urban development (Martinez & Perez, 2021). Developers are clearly aligning with global expectations to reduce carbon footprints and increase energy efficiency in their projects.

The highest mean score of 3.55 was for incorporating energy-efficient features such as solar panels and green spaces, highlighting the developers' significant efforts to promote environmental sustainability. These findings align with global trends in construction where energy-efficient measures,

such as green roofing and solar energy, are seen as essential components of sustainable development (Robinson & Evans, 2023). By focusing on these features, developers are not only improving the sustainability of their buildings but also making a positive contribution to climate change mitigation.

The lowest mean score of 3.42 was for the use of eco-friendly materials, suggesting that while developers are focusing on energy efficiency, there is still room for improvement in the adoption of sustainable building materials. The limited use of eco-friendly materials may be due to higher costs or challenges in sourcing them, which has been a common barrier to the broader adoption of sustainable construction practices (Thompson & Wright, 2022). Addressing these barriers could help developers make greater strides toward environmental sustainability.

Table 1
The Management Strategies of Real Estate Developers in terms of Sustainable Design and Construction

Statements	Mean	Description
The real estate developer uses eco-friendly materials in the construction of buildings.	3.42	0.50
The development projects incorporate energy-efficient features such as solar panels or green spaces.	3.55	0.52
Flood-resistant infrastructure is integrated into the design of the community's buildings.	3.44	0.54
The developer ensures that the construction follows sustainable building practices.	3.44	0.50
Waste management systems are implemented effectively in the development projects.	3.49	0.50
Overall	3.47	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

In the domain of Disaster Preparedness and Mitigation, the overall mean of 3.49 reflects that developers in Batangas City are highly committed to flood risk management and mitigation. The focus on minimizing disaster risks is essential to ensuring community resilience against natural hazards. This aligns with research emphasizing the importance of risk management strategies for reducing disaster impacts in urban environments (Taylor & Brown, 2020).

The highest mean score of 3.51 was for flood mitigation measures and the provision of early warning systems. These strategies play a key role in ensuring that both infrastructure and residents are prepared for natural disasters, particularly floods. Previous studies have shown that effective flood mitigation and early warning systems are crucial in safeguarding communities and minimizing damage (Morris & Scott, 2023). Developers in Batangas City are clearly prioritizing these strategies to enhance resilience and ensure residents' safety.

The lowest mean score of 3.46 was for collaboration with local authorities on disaster preparedness, indicating that while developers are committed to disaster risk mitigation, there may be opportunities to improve cooperation with local governments. Strengthening these collaborations could lead to more comprehensive and effective disaster preparedness and response strategies, a point emphasized in recent studies on public-private partnerships for disaster risk reduction (Walker & Clark, 2022).

Table 2
The Management Strategies of Real Estate Developers in terms of Disaster Preparedness and Mitigation

Statements	Mean	Description
The real estate developer conducts regular flood risk assessments for the projects.	3.50	0.52
Flood mitigation measures are a priority in the planning and construction of buildings.	3.51	0.50
The developer provides residents with early warning systems for natural disasters.	3.51	0.52
The construction design incorporates disaster-resilient features, such as elevated structures.	3.49	0.50
The real estate developers collaborate with local authorities on disaster preparedness initiatives.	3.46	0.50
Overall	3.49	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean of 3.50 for Community Engagement suggests that real estate developers are making significant efforts to involve local communities in the planning and implementation of their projects. This reflects a growing recognition of the importance of community involvement in ensuring the long-term sustainability and resilience of development projects (Garcia & Santiago, 2022). Developers in Batangas City are likely investing in community engagement initiatives to build trust and improve disaster preparedness outcomes.

The highest mean score of 3.57 was for establishing communication channels for residents to report safety concerns, showing that developers prioritize transparency and communication with local communities. Research supports the view that effective communication with residents is a critical element in building trust and enhancing disaster preparedness (Miller & Brown, 2023). Open communication allows residents to feel more involved and secure, which can significantly improve disaster response and recovery efforts.

The lowest mean score of 3.45 was for regularly informing residents about disaster preparedness strategies, indicating that while communication is a priority, there may be opportunities to improve the consistency and frequency of disaster preparedness updates. Previous research suggests that ongoing community education and awareness campaigns are essential to ensuring that residents are well-prepared for potential disasters (Johnson & Lee, 2023). This suggests an opportunity for developers to increase their efforts in regularly educating and informing residents.

Table 3

The Management Strategies of Real Estate Developers in Terms of Community Engagement

Statements	Mean	Description
The real estate developer actively involves community members in the planning stages of the projects.	3.53	0.52
Residents are regularly informed about disaster preparedness strategies by the developers.	3.45	0.50
Community feedback is considered when making decisions about building plans and infrastructure.	3.48	0.50
The developer organizes awareness programs on disaster risk reduction for residents.	3.48	0.50
The developer establishes communication channels for residents to report safety concerns or issues.	3.57	0.50
Overall	3.50	0.50

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.52 for Regulatory Compliance suggests that real estate developers in Batangas City strongly adhere to local regulations and sustainability laws. This indicates that the developers are following building codes and environmental laws to ensure their projects are compliant and safe. Regulatory compliance is crucial for ensuring that urban developments meet safety standards and environmental expectations, especially in areas prone to natural disasters (Hernandez & Clark, 2022).

The highest mean score of 3.54 for adhering to environmental sustainability laws and policies highlights the developers' commitment to minimizing their ecological footprint. Compliance with sustainability regulations ensures that developments do not harm the environment, aligning with global best practices for sustainable urban growth (Davis & Williams, 2021). These findings suggest that Batangas developers are fully aware of their environmental responsibilities and are taking steps to meet the sustainability standards set by local authorities.

The lowest mean score of 3.50 for ethical business practices, including transparency in dealings with residents and local authorities, indicates that while developers are maintaining a strong level of transparency, there is still room for improvement. Research emphasizes that ethical practices and

transparency in communication foster trust and contribute to the long-term success of development projects (Robinson & Evans, 2023). Enhancing these practices can further strengthen relationships between developers and the communities they serve.

Table 4
The Management Strategies of Real Estate Developers in terms of Regulatory Compliance

Statements	Mean	Description
The developer strictly follows local regulations and building codes concerning flood risk management.	3.53	0.52
The real estate projects adhere to environmental sustainability laws and policies.	3.54	0.50
The developer ensures that all building permits and regulatory approvals are in place before construction.	3.52	0.50
Ethical business practices are followed, including transparency in dealings with residents and local authorities.	3.50	0.50
The developer upholds its commitment to community welfare and environmental responsibility.	3.53	0.50
Overall	3.52	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.50 for Risk Assessment shows that developers are dedicated to identifying and managing potential risks associated with natural disasters. This strong commitment to risk management is essential for ensuring the safety and resilience of new developments in flood-prone areas. The proactive identification and mitigation of risks align with global recommendations for integrating risk assessment into urban development (Taylor & Brown, 2020).

The highest mean score of 3.55 for regularly updating risk management strategies based on emerging environmental data indicates that developers are continually adapting their strategies to changing conditions. Research has shown that ongoing updates to risk management plans, based on the latest environmental data, are key to reducing vulnerabilities and improving disaster preparedness (Rodriguez & Williams, 2022). This finding emphasizes that developers in Batangas City are committed to long-term resilience by staying informed and responsive to environmental changes.

The lowest mean score of 3.40 for involving both technical experts and community members in risk management plans suggests that there is still room to improve community participation in the risk assessment process. Engaging community members can provide valuable local knowledge, enhancing the effectiveness of risk management strategies and ensuring that residents' needs are met (Anderson & Clark, 2022). Strengthening community involvement in risk planning could lead to more comprehensive and inclusive disaster management strategies.

Table 5
The Management Strategies of Real Estate Developers in Terms of Risk Assessment

Statements	Mean	Description
The developer conducts comprehensive risk assessments to identify flood and other disaster-related threats.	3.53	0.54
Disaster preparedness and risk management plans are created and shared with residents before the project begins.	3.50	0.50
The developer implements proactive measures to minimize the risks associated with natural disasters.	3.50	0.50
The developer regularly updates risk management strategies based on emerging environmental data.	3.55	0.52
The risk management plans are designed with input from both technical experts and community members.	3.40	0.49
Overall	3.50	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.50 for Management Strategies indicates that developers in Batangas City are generally implementing sound management practices across multiple domains. This score reflects the developers' commitment to adopting sustainable design, disaster mitigation strategies, and community engagement initiatives, ensuring that their projects contribute positively to community resilience. Studies emphasize that integrated management strategies are key to enhancing the overall resilience of urban developments (Hernandez & Clark, 2022).

The highest mean score of 3.52 for Regulatory Compliance highlights the developers' strong adherence to regulations, reinforcing the importance of compliance in ensuring safety and sustainability. Research supports the view that regulatory compliance helps prevent environmental degradation and ensures that development projects align with local governance and safety standards (Davis & Williams, 2021). This suggests that developers in Batangas City are diligent in meeting legal and ethical standards.

The lowest mean score of 3.47 for Sustainable Design and Construction indicates that while developers are prioritizing eco-friendly practices, further improvements are needed in the use of sustainable materials and energy-efficient features. The challenges of cost and material sourcing often limit the broader application of sustainable building materials, and addressing these barriers could improve the environmental impact of urban development (Thompson & Wright, 2022).

Table 6
Summary of Management Strategies of Real Estate Developers

Statements	Mean	Description
Sustainable Design and Construction	3.47	0.51
Disaster Preparedness and Mitigation	3.49	0.51
Community Engagement	3.50	0.5
Regulatory Compliance	3.52	0.51
Risk Assessment	3.50	0.51
Overall	3.50	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.52 for Disaster Response and Recovery indicates that the community in Batangas City is highly capable of responding to and recovering from flood disasters. This high score suggests that effective disaster response mechanisms and recovery plans are in place, enabling the community to recover quickly from disruptions. Research has shown that communities with strong disaster response and recovery frameworks are more resilient and better able to bounce back after a disaster (Taylor & Brown, 2020).

Table 7
Community Resilience in terms of Disaster Response and Recovery

Statements	Mean	Description
The community has an effective and quick response plan during flood disasters.	3.50	0.50
The community can recover quickly from flood-related damages to homes and infrastructure.	3.43	0.50
The residents have access to emergency relief services during and after a disaster.	3.55	0.50
The local government and developers provide adequate support to the community during disaster recovery.	3.56	0.52
The community has established plans for rebuilding and recovering from natural disasters.	3.58	0.50
Overall	3.52	0.50

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The highest mean score of 3.58 for having established plans for rebuilding and recovering from natural disasters demonstrates that the community is well-prepared for long-term recovery. Previous studies emphasize that comprehensive recovery plans are crucial for minimizing long-term disruptions and

enabling communities to return to normalcy quickly after a disaster (Morris & Scott, 2023). This finding highlights the importance of proactive planning and preparedness in building disaster-resilient communities.

The lowest mean score of 3.43 for the ability to recover quickly from flood-related damage suggests there may be room for improvement in recovery speed. Factors such as infrastructure damage, financial constraints, and resource availability can slow recovery efforts. Strengthening community capacity for faster recovery could help reduce the impact of future disasters (Rodriguez & Williams, 2022).

The overall mean score of 3.47 for Social Cohesion and Support Networks reflects that the community in Batangas City has a strong network of social support, which plays a key role in resilience. The presence of strong social bonds helps residents support one another during times of disaster, enhancing the community's ability to respond and recover. Research has shown that social cohesion is a critical factor in strengthening community resilience in disaster-prone areas (Miller & Brown, 2023).

The highest mean score of 3.53 for the presence of active community organizations underscores the role of organized groups in enhancing disaster response. Community organizations often play a central role in mobilizing resources, providing assistance, and coordinating recovery efforts. Previous studies emphasize that active community organizations are essential for fostering social resilience and ensuring effective disaster response (Garcia & Santiago, 2022). This finding suggests that the community in Batangas City benefits from a well-organized network of local groups that can provide vital support during disasters.

The lowest mean score of 3.43 for neighbors frequently supporting each other during a natural disaster indicates that while social networks are strong, there may be opportunities to enhance informal support systems. Strengthening neighbor-to-neighbor assistance can further improve the community's overall resilience by ensuring that residents can rely on each other during times of crisis (Johnson & Lee, 2023).

Table 8
Community Resilience in terms of Social Cohesion and Support Networks

Statements	Mean	Description
There are strong social networks within the community that help residents during times of disaster.	3.51	0.52
Neighbors frequently support each other in the event of a natural disaster.	3.43	0.52
The community fosters a sense of solidarity, with people coming together to solve problems.	3.43	0.50
The presence of active community organizations helps strengthen resilience during disaster events.	3.53	0.50
Social bonds in the community contribute to the effectiveness of disaster response.	3.43	0.52
Overall	3.47	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.53 for Infrastructure Resilience indicates that the community's infrastructure is well-prepared to withstand flood risks and other natural hazards. This score suggests that developers and local authorities have made significant investments in ensuring the durability and adaptability of critical infrastructure. Research supports the idea that resilient infrastructure is a cornerstone of disaster resilience, as it enables communities to recover more quickly from disaster impacts (Rodriguez & Williams, 2022).

The highest mean score of 3.62 for the community infrastructure's ability to withstand flood risks underscores the effectiveness of flood-resistant infrastructure in protecting residents. Studies have highlighted that resilient infrastructure, such as elevated roads, flood barriers, and reinforced buildings, is crucial for minimizing flood damage and ensuring the continuity of community functions (Taylor &

Brown, 2020). This finding suggests that Batangas City has made significant progress in building resilient infrastructure to mitigate flood risks.

The lowest mean score of 3.46 for the regular maintenance of infrastructure indicates that while the community's infrastructure is generally resilient, ongoing maintenance is essential to ensuring its continued effectiveness. Regular inspections and upkeep of critical infrastructure, such as roads, bridges, and utility services, are necessary to ensure that they remain functional during and after disasters (Hernandez & Clark, 2022).

Table 9
Community Resilience in terms of Infrastructure Resilience

Statements	Mean	Description
The community infrastructure is designed to withstand flood risks and other natural hazards.	3.62	0.51
Key facilities such as schools, hospitals, and markets are built to be resilient to flooding.	3.53	0.52
Roads and bridges in the community are elevated or built to resist floodwater.	3.50	0.52
Utility services, such as water and electricity, are designed to function even during flood events.	3.52	0.52
The community's infrastructure is regularly maintained to ensure its readiness in case of natural disasters.	3.46	0.52
Overall	3.53	0.52

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.50 for Economic Resilience suggests that the community in Batangas City is capable of recovering economically after a disaster. This score indicates that residents have access to resources and support systems that help them maintain economic stability during and after disasters. Previous studies show that economic resilience is vital for ensuring that communities can bounce back quickly from financial setbacks caused by natural disasters (Morris & Scott, 2023).

The highest mean score of 3.54 for the local economy's ability to adapt strategies that help businesses survive and thrive despite flood risks shows that economic resilience is a priority for local stakeholders. Strategies like diversifying livelihoods and supporting business continuity are key to ensuring that the local economy remains strong even in the face of disasters. Research has shown that communities with adaptable economic systems are more likely to recover quickly from economic disruptions (Rodriguez & Williams, 2022).

The lowest mean score of 3.46 for the ability of the community to quickly return to economic stability after a disaster suggests that while economic resilience is strong, challenges remain. Factors like limited access to financial resources and slow recovery of businesses can impede the community's ability to recover swiftly. Strengthening financial support systems and business continuity plans could help improve economic resilience in the future (Johnson & Lee, 2023).

Table 10
Community Resilience in terms of Economic Resilience

Statements	Mean	Description
The community is able to quickly return to economic stability after a disaster.	3.46	0.50
Businesses in the community receive adequate support for recovery after natural disasters.	3.50	0.50
Job opportunities in the community are maintained even during and after a disaster.	3.48	0.50
Financial aid programs are available to help the community recover economically from disasters.	3.52	0.52
The local economy has adapted strategies that help businesses survive and thrive despite flood risks.	3.54	0.50
Overall	3.50	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.46 for Sustainability of Livelihoods suggests that the community in Batangas City is moderately capable of sustaining its livelihoods despite the challenges posed by frequent flooding. This score indicates that while some residents can maintain their livelihoods, barriers to full sustainability include environmental hazards and limited access to alternative livelihoods. Research has shown that ensuring livelihood sustainability is key to long-term resilience in flood-prone areas (Garcia & Santiago, 2022).

The highest mean score of 3.52 for the availability of financial services, such as microloans, suggests that financial support systems are helping residents recover and sustain their businesses after a disaster. Microfinance programs have been shown to play a critical role in helping communities rebuild their livelihoods after natural disasters (Miller & Brown, 2023). This indicates that Batangas City's residents have access to resources that help them maintain their economic stability and recover from the impacts of disasters.

The lowest mean score of 3.41 for disaster-proof livelihood strategies, such as agricultural diversification, indicates that while some residents are adopting resilient livelihood strategies, there is room for improvement. Expanding livelihood diversification programs and promoting climate-resilient agricultural practices could enhance the community's ability to sustain livelihoods amid frequent flooding (Thompson & Wright, 2022).

Table 11
Community Resilience in terms of Sustainability of Livelihoods

Statements	Mean	Description
Residents can sustain their livelihoods despite the challenges posed by frequent flooding.	3.46	0.50
The community has access to alternative livelihood programs to ensure economic continuity.	3.47	0.50
Disaster-proof livelihood strategies, such as agriculture diversification, are promoted in the community.	3.41	0.49
The community's livelihood practices are designed to minimize the impact of environmental hazards.	3.46	0.52
The availability of financial services, such as microloans, helps residents recover and sustain their businesses post-disaster.	3.52	0.52
Overall	3.46	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The overall mean score of 3.49 for Community Resilience indicates that the community in Batangas City has a high level of resilience, which reflects the community's ability to recover and adapt to disaster-related disruptions. This suggests that a majority of the respondents perceive the community's preparedness for disasters as adequate. Strong community resilience is essential for enhancing the local ability to withstand and recover from natural hazards, especially in flood-prone areas. Research shows that communities with established disaster response systems and social support structures are better equipped to recover from environmental shocks (Williams & Thompson, 2021). The findings indicate that Batangas City has made significant strides in fostering resilience, but there may still be room for improvement in areas like infrastructure and livelihood sustainability.

The highest mean score of 3.53 for Infrastructure Resilience suggests that the community's physical infrastructure, including roads, bridges, and public buildings, is well-prepared to withstand the impact of natural disasters such as floods. This high score aligns with findings from studies showing that resilient infrastructure is crucial for reducing long-term disruptions caused by natural disasters (Walker & Mason, 2022). Infrastructure resilience is vital in flood-prone areas, as it ensures that basic services and community functions continue to operate during and after a disaster. These findings suggest that Batangas City has successfully invested in infrastructure projects that prioritize disaster resistance and

recovery, which is an essential factor in maintaining the community's functionality during emergencies.

The lowest mean score of 3.46 for Sustainability of Livelihoods indicates that while the community has measures in place to sustain livelihoods after a disaster, there are challenges in ensuring long-term economic stability. This result suggests that some residents still face difficulties in maintaining their businesses or jobs during and after flooding events. Financial resources, access to alternative livelihoods, and the recovery of local markets may be limiting factors in achieving full economic resilience. Research has shown that livelihood sustainability programs, such as microloans and diversified agricultural practices, play a critical role in helping communities recover economically after natural disasters (Liu & Zhang, 2023). To further enhance the community's resilience, there should be a stronger focus on expanding livelihood support programs and ensuring that residents have access to the resources they need for sustained economic recovery.

Table 12
Summary of Community Resilience

Statements	Mean	Description
Disaster Response and Recovery	3.52	0.50
Social Cohesion and Support Networks	3.47	0.51
Infrastructure Resilience	3.53	0.52
Economic Resilience	3.50	0.51
Sustainability of Livelihoods	3.46	0.51
Overall	3.49	0.51

Legend: 1.00-1.75 Strongly Disagree, 1.76-2.50 Disagree, 2.51-3.25 Agree, and 3.26-4.00 Strongly Agree

The relationship between the management strategies of real estate developers and community resilience reveals that the strategies related to Risk Assessment and Management show a notable connection with Disaster Response and Recovery. This suggests that the developers' efforts in identifying and mitigating risks before and after a disaster contribute meaningfully to enhancing the community's ability to recover and adapt. Effective risk management strategies, including flood hazard assessments and disaster preparedness plans, are essential for reinforcing community recovery mechanisms. Research has emphasized that communities with well-integrated risk management strategies exhibit stronger recovery capacity and are more resilient in the aftermath of natural disasters (Anderson & Peterson, 2023). The positive relationship between these two variables highlights the importance of incorporating risk assessment as a critical component of disaster resilience planning.

The relatively weak correlation between other management strategies, such as Disaster Preparedness and Mitigation and Community Engagement, with community resilience suggests that while developers implement various strategies to enhance disaster readiness, these efforts are not translating directly into measurable resilience outcomes. This disconnect may be due to several factors, including the absence of comprehensive integration between developers' strategies and local government actions, or a lack of sufficient community involvement in these preparedness efforts. As noted in prior studies, successful disaster preparedness requires multi-stakeholder collaboration, which includes local authorities, community leaders, and developers working together to create effective strategies that are both actionable and impactful (Morris & Scott, 2021). The findings indicate that increasing collaboration among stakeholders could improve the effectiveness of preparedness efforts and enhance resilience.

The results also suggest that Community Engagement strategies, which include involving residents in the planning stages and maintaining open communication channels, have less of a direct impact on the community's ability to respond to or recover from disasters. This may indicate that while developers

are making efforts to engage the community, these strategies might not be sufficiently integrated into broader disaster risk management frameworks. For community engagement to meaningfully enhance resilience, it must go beyond one-time consultations and involve ongoing dialogues, training, and active participation in disaster mitigation efforts. Literature indicates that communities with strong, continuous engagement tend to have a more robust sense of ownership over their disaster risk reduction plans, which leads to more effective and timely responses during crises (Garcia & Santiago, 2022).

Table 13
Relationship between Management Strategies of Real Estate Developers and Community Resilience

Management Strategies	Community Resilience				
	Disaster Response and Recovery	Social Cohesion and Support Networks	Infrastructure Resilience	Economic Resilience	Sustainability of Livelihoods
Sustainable Design and Construction					
r-value	.063	-.050	-.130	-.161	-.060
p-value	.534	.620	.199	.109	.550
Disaster Preparedness and Mitigation					
r-value	.000	-.022	-.119	-.180	0.17
p-value	.997	.831	.240	.073	.867
Community Engagement					
r-value	.040	.022	-.002	-.020	.024
p-value	.696	.831	.984	.843	.816
Regulatory Compliance and Ethical Practices					
r-value	.040	-.018	-.042	-.060	-.017
p-value	.696	.855	.677	.553	.867
Risk Assessment and Management					
r-value	.322**	-.025	.006	.100	.051
p-value	.001	.806	.952	.321	.613

** . Correlation is significant at the 0.01 level (2-tailed).

CONCLUSION

The findings of this study highlight the critical role of real estate developers in fostering community resilience through their management strategies. The results suggest that Risk Assessment and Management strategies are strongly linked to Disaster Response and Recovery, emphasizing the importance of proactive measures in identifying and mitigating disaster risks. However, the study also reveals that other management strategies, such as Disaster Preparedness and Mitigation and Community Engagement, while implemented by developers, are not as directly correlated with resilience outcomes. This indicates that the effectiveness of these strategies could be enhanced through better integration with local governance, increased community involvement, and more comprehensive risk management planning.

Despite these challenges, the study underscores the potential for developers to make substantial contributions to building disaster-resilient communities in Batangas City. The findings suggest that by improving community engagement practices and further aligning their strategies with local disaster risk reduction frameworks, developers can enhance the long-term resilience of the communities they

serve. As urbanization continues and the frequency of natural disasters rises, real estate developers must adopt more holistic planning approaches that prioritize environmental sustainability and community resilience, ensuring that urban developments are not only safe but also adaptable to future challenges.

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