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BAITING FOR SOLUTIONS: INVESTIGATING SMALL SCALE COMMERCIAL FISHERMEN'S FISHING STRATEGIES TO MITIGATE INFLATION

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Abstract : This study investigated the fishing strategies employed by small-scale commercial fishermen to mitigate the effects of inflation in Barangay Kabatiol, Maasim, Sarangani Province. Inflation has significantly increased fuel prices, fishing input costs, and basic commodity prices, thereby reducing fishermen's purchasing power and income stability. Anchored on the Sustainable Livelihoods Framework, the study aimed to determine the demographic and economic profile of fishermen, assess the extent of fishing strategies employed in response to inflation, examine differences in strategy use when grouped according to income level, and explore the challenges and barriers that limited participation in online platforms and community-based marketing strategies. A mixed-method research design was utilized. Quantitative data were gathered from thirty (30) small-scale commercial fishermen using a structured survey questionnaire, while qualitative data were collected through Key Informant Interviews with three purposively selected participants. Descriptive statistics, including frequency, percentage, and weighted mean, were used to analyze quantitative data, and one-way ANOVA tested differences across income groups. Qualitative data were analyzed using thematic analysis. Findings revealed that cost management, financial management, technological integration, and collaborative approaches were employed to a high extent, while market adaptation strategies were only moderately practiced. A significant difference was found in the extent of fishing strategies employed when fishermen were grouped according to income level, indicating that higher income enabled greater adaptive capacity. Qualitative findings showed that structural and digital barriers constrained online selling and community-based marketing to effective online market participation. Indeed, the study highlights the resilience of small-scale fishermen while emphasizing the need for inclusive policies, market support, and capacity-building interventions to strengthen economic sustainability..

IndexTerms **- inflation, small-scale commercial fishermen, fishing strategies, livelihood resilience, cost management, financial management, market adaptation, technological integration, collaborative approaches, Maasim, Sarangani Province, mixed-method research.**

I. INTRODUCTION

Inflation, defined as the sustained increase in the general price level of goods and services, has emerged as one of the most pressing economic challenges confronting developing economies, including the Philippines. In recent years, global supply chain disruptions, fuel price volatility, and geopolitical tensions have intensified inflationary pressures, disproportionately affecting vulnerable sectors that rely heavily on daily income and fuel-dependent production systems. Among these sectors, small-scale commercial fishermen remain particularly exposed due to their limited capital, dependence on fuel and fishing inputs, and constrained access to institutional support. Globally, the Food and Agriculture Organization reported that small-scale fisheries account for more than 90% of capture fishers worldwide, yet they are among the most economically fragile groups during periods of inflation and economic shocks (FAO, 2021).

In the Philippine context, inflation reached levels exceeding 8% in 2022, with fuel prices constituting nearly 80% of operational fishing costs, resulting in reduced fishing trips and declining profit margins for fisherfolk (DA-BFAR, 2022). Small-scale fisheries remain central to national food security, contributing more than half of total fish production while supporting millions of coastal households. However, rising costs of fuel, ice, gear maintenance, and basic commodities have steadily eroded the purchasing power and livelihood stability of small-scale fishermen, particularly in rural coastal communities.

Moreover, this economic strain is acutely felt in coastal municipalities such as Maasim, Sarangani Province, where fishing serves as a primary livelihood. Situated near Sarangani Bay, one of the country's productive fishing grounds, small-scale commercial fishermen in Barangay Kabatiol face escalating costs without commensurate increases in fish prices. While large commercial fishing operations in nearby General Santos City benefit from economies of scale and export-oriented markets, small-scale fishermen operate under constrained conditions characterized by limited market access, unstable pricing systems, and minimal government assistance. Consequently, these fishermen have developed adaptive fishing strategies, ranging from cost-sharing and catch diversification to market innovation and technological integration, to mitigate the adverse effects of inflation. Despite these efforts, empirical evidence on the effectiveness, scope, and limitations of such strategies at the local level remains insufficient.

Also, the importance of this study was anchored on its socio-cultural, political, and historical relevance. Fishing communities in the Philippines are not merely economic units but socio-cultural institutions deeply embedded in coastal heritage, food traditions, and intergenerational livelihoods. Inflation threatens not only income stability but also food access, community resilience, and rural social structures. Recent reports indicate that Filipino fisherfolk remain among the poorest occupational groups, with many earning below the national poverty threshold despite their critical role in food supply chains (ADB, 2020). Politically, the issue is timely, as government fuel subsidy programs and fisheries support mechanisms continue to face criticism for limited coverage and inadequate targeting. Historically, periods of inflation have repeatedly marginalized small-scale producers, reinforcing cycles of poverty and dependence. Understanding how fishermen adapt at the grassroots level provides essential insights for designing responsive and inclusive economic policies.

From a theoretical and disciplinary perspective, this study contributes to the growing body of knowledge in business, economics, and development studies by examining inflation not only as a macroeconomic phenomenon but as a lived economic reality managed through micro-level strategies. While recent studies have explored the impact of inflation on agriculture and fisheries broadly, limited research has focused on the specific adaptive strategies of small-scale commercial fishermen, particularly in relation to cost management, financial practices, market adaptation, technological integration, and collaborative approaches. Moreover, this study introduces a mixed-method approach that integrates quantitative analysis of strategy variation by income level with qualitative insights into barriers faced in digital and community-based marketing, an area that remains underexplored in existing literature. Addressing this gap enhanced the applicability of economic resilience frameworks within the fisheries sector and aligned with the Accountancy, Business, and Management (ABM) discipline's emphasis on financial decision-making and enterprise sustainability.

Furthermore, this study was further grounded in relevant legal and policy frameworks. Republic Act No. 8550, as amended by Republic Act No. 10654 (The Philippine Fisheries Code), mandates the protection of small-scale fisherfolk and the promotion of sustainable and equitable fisheries development. Additionally, national development plans emphasize food security, poverty reduction, and inclusive growth, particularly for marginalized sectors. These legal foundations underscore the responsibility of government institutions to understand and support the adaptive capacities of fishing communities amid economic disruptions. From a broader ethical perspective, the study was also informed by scriptural principles emphasizing stewardship, social justice, and care for vulnerable livelihoods, reinforcing the moral imperative to address economic inequities affecting fisherfolk.

On a personal level, this study was significant to the researchers as members of a coastal province where fishing remains a vital source of income and identity. Direct observations of fishermen struggling with rising costs, coupled with firsthand interactions within fishing communities, motivated the researchers to examine how these individuals navigate inflationary pressures through everyday business decisions. This local exposure provided a meaningful context that shaped the research focus and strengthened the commitment to producing findings that are both academically sound and socially relevant.

In light of the foregoing, this study primarily aimed to investigate the fishing strategies employed by small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province, to mitigate the effects of inflation, with particular emphasis on cost management, financial management, market adaptation, technological integration, and collaborative approaches to inform policies and programs that promote economic resilience and sustainable fisheries development.

Statement of the Problem

This study examined the effects of inflation on local fishermen in Maasim, Sarangani Province, and analyzed the fishing strategies they employed to mitigate its impacts. It further explored the importance of adaptive fishing strategies among small-scale commercial fishermen in sustaining their livelihoods amid rising economic pressures. Ultimately, the research generated insights into the resilience and adaptive capacity of fishing communities in the face of economic challenges.

Specifically, it sought to answer the following questions:

1. What is the demographic and economic profile of the respondents in terms of:
    - 1.1 Age;
    - 1.2. Marital Status;
    - 1.3. Educational Attainment;
    - 1.4. Years of Fishing Experience; and,
    - 1.5. Income Per Fishing Trip?
2. What is the extent of fishing strategies employed by the respondents in terms of:
    - 2.1. Cost Management;
    - 2.2. Financial Management;
    - 2.3. Market Adaptation;
    - 2.4. Technological Integration; and
    - 2.5. Collaborative Approaches?
3. Is there a significant difference in the extent of fishing strategies employed by the respondents when grouped according to income level?
4. What were the challenges and barriers that prevented small-scale fishermen from using online platforms and participating in community-based marketing strategies?

Hypothesis of the Study

H_0 There is no significant difference in the extent of fishing strategies employed by the respondents when grouped according to income.

Significance of the Study

This study is significant as it provides empirical insights into the effects of inflation on small-scale commercial fishermen, a sector that remains economically vulnerable yet essential to local food security and coastal livelihoods. By systematically

examining the adaptive fishing strategies employed by fishermen in response to rising operational costs, the study generated findings that may serve as a valuable basis for policy formulation, livelihood support programs, and community-based interventions. The results of this research benefited various stakeholders as each plays a crucial role in strengthening the resilience and sustainability of the fisheries sector amid ongoing economic challenges.

National Policymakers and Regulatory Agencies (Bureau of Fisheries and Aquatic Resources [BFAR]). This study may provide national policymakers and regulatory agencies with evidence-based insights into how inflation affects small-scale commercial fishermen and the adaptive strategies they employed to cope with rising costs. The findings may inform the refinement of fisheries policies, fuel subsidy programs, and livelihood assistance initiatives to ensure they are responsive to the actual needs of fishing communities. By highlighting effective local strategies, the study supports the formulation of inclusive economic and fisheries development plans. It also contributes to data-driven decision-making in addressing food security and poverty alleviation among fisherfolk. Ultimately, the study strengthens policy interventions aimed at improving the resilience of the fisheries sector amid economic instability.

Local Government Units (Province of Sarangani and Municipality of Maasim). Local government units may benefit from this study as it offers localized data on the economic challenges faced by fishermen within their jurisdiction. The results may guide LGUs in designing targeted programs such as livelihood diversification, financial literacy training, and localized subsidy mechanisms. Insights from the study may also be used to enhance local fisheries management plans and community-based support systems. By understanding the adaptive strategies of fishermen, LGUs may replicate effective practices across other coastal barangays. This study ultimately aids local leaders in promoting sustainable economic development and social protection for fishing communities.

Small-Scale Commercial Fishermen. Small-scale commercial fishermen may directly benefit from the study as it documents practical strategies that have proven effective in mitigating the effects of inflation. The shared experiences and adaptive practices highlighted in the research may serve as a reference for improving cost management, market access, and collaborative efforts. The study also amplifies the voices of fishermen by presenting their challenges and coping mechanisms to policymakers and institutions. Through increased awareness, fishermen may gain access to more responsive support programs and interventions. Generally, the research contributes to strengthening their economic resilience and livelihood sustainability.

Fishing Communities and Households. Fishing communities and households may benefit from the study by gaining a deeper understanding of how inflation impacts household income, food security, and daily living conditions. The findings emphasize the importance of adaptive strategies that may help stabilize earnings and reduce vulnerability to economic shocks. Community members may use the insights to encourage collective actions such as shared resources, cooperative marketing, and mutual support systems. The study also promotes awareness of long-term planning and resilience-building at the household level. As a result, it contributes to improved socio-economic well-being within fishing communities.

Academic Community and Future Researchers. The academic community may benefit from this study as it contributes empirical evidence to the limited body of recent literature on inflation and small-scale fisheries. The research addressed a gap by focusing on local-level adaptive strategies within a specific Philippine coastal context. Its mixed-method approach may serve as a methodological reference for future studies in economics, business, and development research. The findings also open opportunities for comparative studies across regions and sectors. Ultimately, the study supports the advancement of knowledge and encourages further scholarly inquiry on economic resilience in marginalized communities.

ABM Students and Educators. ABM students and educators may benefit from this study as it provides a real-world application of business and economic concepts such as cost management, financial decision-making, and market adaptation. The research serves as a practical learning material that links classroom theories to actual community-based business challenges. Educators may use the study as a case example in teaching entrepreneurship, economics, and strategic management. For students, it enhances analytical skills and contextual understanding of economic issues affecting local industries. Overall, the study enriches learning experiences by grounding business education in socially relevant contexts.

Scope and Delimitation of the Study

This study focused on examining the effects of inflation on small-scale commercial fishermen in Maasim, Sarangani Province, with particular emphasis on the fishing strategies they employed to mitigate its economic impacts. Conceptually, the study analyzed inflation as an external economic pressure influencing fishermen's operational costs, income stability, and livelihood sustainability. The fishing strategies examined included cost management, financial management, market adaptation, technological integration, and collaborative approaches, which were assessed to determine their role in enhancing resilience amid rising prices. These concepts were analyzed within the local fisheries context, highlighting how fishermen adapt their practices in response to inflationary challenges. The study aimed to identify effective strategies and prevailing constraints to inform policy and community-level interventions.

Methodologically, the study employed a mixed-method research design to provide a comprehensive understanding of the phenomenon. Quantitative data were gathered through a structured survey questionnaire to determine the extent of inflation's impact and the prevalence of specific fishing strategies. Qualitative data were collected through Key Informant Interviews (KII) and open-ended survey responses to capture in-depth insights into fishermen's lived experiences about the challenges and barriers that prevented them from using online platforms and participating in community-based marketing strategies.

Moreover, the respondents consisted of thirty (30) small-scale commercial fishermen who met the inclusion criteria established by the researchers. Specifically, the participants were fishermen residing in Barangay Kabatiol, Maasim, Sarangani Province; were married with children regardless of the number of dependents; had at least one (1) year of fishing experience; relied solely on fishing as their primary source of livelihood; were registered with the appropriate government agencies; and were classified as small-scale commercial fishermen. A purposive sampling technique was utilized to ensure that participants possessed relevant experience and knowledge related to the study.

Geographically, the study was conducted in Brgy. Kabatiol, Maasim, Sarangani Province only, where fishing serves as a primary source of livelihood. This area was chosen due to its proximity to fishing grounds and the prevalence of small-scale

commercial fishing activities. Data collection was carried out during the School Year 2025–2026 to ensure the relevance and timeliness of the findings. The selected location provided a suitable setting for examining localized economic impacts of inflation on fishing communities.

However, the study was delimited in several respects. It included only small-scale commercial fishermen operating within Brgy. Kabatiol, Maasim, Sarangani Province, excluding fishermen from other barangays, municipalities and large-scale commercial fishing operators. The study relied on a limited sample size, which may affect the generalizability of the findings to broader fishing populations. Conceptually, the research focused solely on inflation-related impacts and adaptive fishing strategies, excluding other external factors such as climate change, resource depletion, and regulatory enforcement. Consequently, the findings were specific to the local context of Maasim, Sarangani Province, and were interpreted within these defined boundaries.

Theoretical Framework of the Study

This study was anchored primarily on the Sustainable Livelihoods Framework (SLF) developed by Chambers and Conway (1992) and later operationalized by the Department for International Development (DFID, 1999). The Sustainable Livelihoods Framework is widely used in development, fisheries, and poverty studies to explain how individuals and households sustain their livelihoods while responding to economic, social, and environmental pressures. At its core, the theory assumes that livelihoods are shaped by the interaction of assets, external shocks, institutional structures, and livelihood strategies, which together influence livelihood outcomes such as income stability, resilience, and well-being.

According to the SLF, livelihoods are vulnerable to external shocks and stresses, including economic disruptions such as inflation, fuel price volatility, and market instability. These shocks influence the availability and use of livelihood assets, namely financial, physical, human, social, and natural capital, which in turn shape the strategies that individuals adopt to survive. In the context of small-scale fisheries, inflation functions as a major vulnerability factor that constrains fishermen's financial capital, increases operational costs, and reduces income security. Consequently, fishermen respond by adopting adaptive strategies such as cost management, financial adjustments, market adaptation, technological integration, and collaborative approaches. These assumptions directly align with the general research problem of the present study, which examines how inflation affects small-scale commercial fishermen and how they respond through various fishing strategies.

More specifically, this study drew on the livelihood strategies component of the Sustainable Livelihoods Framework. Livelihood strategies refer to the combination of activities and choices that individuals make in pursuit of their livelihood goals. For small-scale commercial fishermen in Barangay Kabatiol, these strategies manifested in how they managed fuel and labor costs, accessed financial resources, adapted to market conditions, utilized technology, and engaged in collective or community-based arrangements. The framework provided a lens for understanding these strategies not as isolated decisions but as interconnected responses shaped by income level, institutional access, and community context. Thus, the SLF enable the study to situate fishermen's economic strategies within a broader livelihood system influenced by inflationary pressures.

The Sustainable Livelihoods Framework was particularly appropriate for the present study because it explicitly recognized contextual and structural influences on livelihood decisions. Unlike purely economic theories that focus on profit maximization, the SLF acknowledges that small-scale fishermen prioritize survival, risk reduction, and household security over income maximization. This perspective is consistent with findings from fisheries research showing that fishermen's decisions are shaped by vulnerability, uncertainty, and limited access to resources (FAO, 2021; Jentoft, 2022). The framework therefore offered a more realistic and socially grounded explanation of fishermen's economic behavior under inflationary conditions.

Given that the present study employed a mixed-method research design with stronger emphasis on the qualitative strand, the Sustainable Livelihoods Framework served as a guiding framework for interpreting fishermen's lived experiences and narratives. The qualitative component explored how fishermen perceived inflation, how income constraints affected their choices, and how social and institutional factors influenced their adaptive strategies. The SLF provided the conceptual structure for organizing these qualitative findings into coherent themes related to vulnerability, assets, and strategies. At the same time, the quantitative component, which examined variations in strategies when fishermen were grouped according to income, aligned with the framework's assumption that differences in asset levels result in differences in livelihood strategies.

Compared with other related theories such as Resilience Theory or Rational Choice Theory, the Sustainable Livelihoods Framework was more suitable for this study. While Resilience Theory emphasizes the ability to absorb shocks and recover, it does not fully account for the socioeconomic and institutional constraints faced by marginalized groups such as small-scale fishermen. Rational Choice Theory, on the other hand, assumes access to complete information and freedom of choice, which is often unrealistic in poverty-stricken fishing communities. In contrast, the SLF integrates economic, social, institutional, and environmental dimensions, making it more comprehensive and context-sensitive. Previous studies on fisheries and rural livelihoods have also demonstrated the effectiveness of the SLF in analyzing adaptive strategies under economic stress (Allison & Ellis, 2001; FAO, 2021).

In summary, the Sustainable Livelihoods Framework provided a strong theoretical foundation for explaining how inflation shaped the economic strategies of small-scale commercial fishermen. It allowed the study to link income constraints, institutional conditions, and adaptive behavior within a single analytical lens. By framing fishermen's strategies as livelihood responses to economic vulnerability, the framework enhanced the explanatory power of both the quantitative and qualitative findings. Ultimately, the use of this theory strengthened the study's contribution to fisheries development, livelihood resilience, and policy-relevant research.

Research Gap

The reviewed literature collectively examined the economic conditions, vulnerabilities, and adaptive strategies of small-scale fishermen in response to economic pressures such as inflation, rising fuel costs, governance constraints, and environmental change. Studies by Chambers and Conway (1992), Allison and Ellis (2001), Jentoft (2022), Chuenpagdee et al. (2020), Fabinyi et al. (2020), Garcia et al. (2021), Rahman et al. (2022), Nguyen et al. (2021), Dizon et al. (2021), Reyes and Tolentino (2022), Santos

et al. (2021), Mozumder (2023), and reports from FAO (2022), ADB (2020), World Bank (2021), and IPCC (2022) consistently highlighted that fishermen adopt various strategies including cost management, financial coping mechanisms, market adaptation, technological integration, collaboration, and reliance on institutional support.

Most of these studies emphasized the structural vulnerability of small-scale fisheries and the importance of resilience-building measures. While there is broad agreement that inflation and economic shocks negatively affect fishermen's livelihoods, the literature presented varying insights on the effectiveness of adaptive strategies depending on income level, access to resources, and institutional context. Completely, the studies provided a strong theoretical and empirical foundation for understanding fishermen's economic behavior but also revealed inconsistencies in focus, scope, and methodological approaches.

Despite the breadth of existing literature, several research gaps were identified. First, many studies relied heavily on quantitative survey designs or secondary data, which limited the exploration of fishermen's lived experiences, decision-making processes, and contextual constraints. Second, most studies were conducted at national, regional, or international levels, resulting in limited localized or barangay-level analysis. Third, although adaptive strategies were widely discussed, they were often treated as isolated responses rather than interconnected economic decisions shaped by income differences. Fourth, few studies explicitly examined how income level moderates the choice and extent of economic strategies adopted by fishermen. Additionally, there is limited empirical literature that integrates qualitative insights with income-based quantitative comparisons, particularly in small coastal communities in the Philippines. These gaps suggest that existing studies may not fully capture the complexity and context-specific nature of fishermen's economic strategies.

Among the gaps identified, the present study focused on three specific areas. First, it addressed the lack of localized research by examining small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province, a context that has not been sufficiently explored in prior studies. Second, it focused on how differences in income levels influence the extent and type of economic strategies employed, thereby clarifying the role of income as a key conditioning factor in adaptive behavior.
Third, the study employed a mixed-method approach with stronger qualitative emphasis, allowing for an in-depth examination of fishermen's experiences, challenges, and decision-making processes while complementing these insights with quantitative comparisons. By filling these gaps, the study contributed context-specific, empirically grounded evidence that deepens understanding of how inflation shapes the economic strategies and livelihood resilience of small-scale fishermen.

Conceptual Framework

Figure 1, on the next page, illustrates the conceptual framework of the study, which explains the relationship between inflation and the mitigating strategies employed by small-scale commercial fishermen, with selected socio-demographic and economic characteristics serving as intervening variables. The framework adopted an Independent Variable–Dependent Variable (IV–DV) model, emphasizing how external economic pressures influence fishermen's strategic responses rather than merely describing a process.

The independent variable in the framework is inflation, operationalized through three indicators: rising fuel prices, increased cost of fishing inputs, and reduced purchasing power. These indicators represent the major inflationary pressures identified in the reviewed literature as directly affecting fishing operations and household income. Rising fuel prices increase operational costs, particularly for boat travel and fishing trips; increased input costs raise expenses for gear, ice, and maintenance; and reduced purchasing power weakens fishermen's ability to meet both operational and household needs. Collectively, these factors capture inflation as a multifaceted economic stressor confronting small-scale fishermen.

The dependent variable consists of the fishermen's mitigating strategies, which represent the adaptive responses employed to cope with inflation. These strategies include cost management, financial management, market adaptation, technical integration, and collaborative approaches. Cost management strategies refer to actions taken to reduce operational expenses, such as limiting fuel use or adjusting fishing schedules.

Moreover, financial management involves saving, borrowing, or accessing credit to sustain operations. Market adaptation includes changes in selling practices and pricing strategies, while technical integration refers to the use of fishing or digital technologies to improve efficiency. Collaborative approaches involve cooperation with other fishermen through shared resources, joint activities, or participation in community organizations. These strategies reflect livelihood-oriented responses aimed at sustaining fishing activities under economic pressure.

The framework further recognizes the role of intervening variables, namely age, marital status, educational attainment, years of fishing experience, and income per fishing trip. These variables do not directly cause mitigating strategies but influence how fishermen perceive inflation and their capacity to respond. For instance, fishermen with longer experience may rely on traditional coping mechanisms, while those with higher educational attainment may be more open to technological integration. Income per fishing trip, in particular, conditions the extent to which fishermen can adopt certain strategies, as those with higher income may have greater flexibility in managing costs or accessing financial services. Thus, these intervening variables shape the strength and direction of the relationship between inflation and mitigating strategies.

Finally, the conceptual framework demonstrates that inflation directly influences the mitigating strategies of fishermen, while individual and economic characteristics intervene in this relationship. The model aligns with the study's objectives by explaining not only what strategies are used but also why variations exist among fishermen. By integrating inflationary pressures, adaptive strategies, and intervening factors, the framework provides a coherent guide for data analysis and interpretation. It also reflects the livelihood-oriented perspective of the study, emphasizing resilience and adaptation rather than profit maximization. Consequently, this conceptual framework effectively supports the investigation of how small-scale commercial fishermen respond to inflation within their local context.

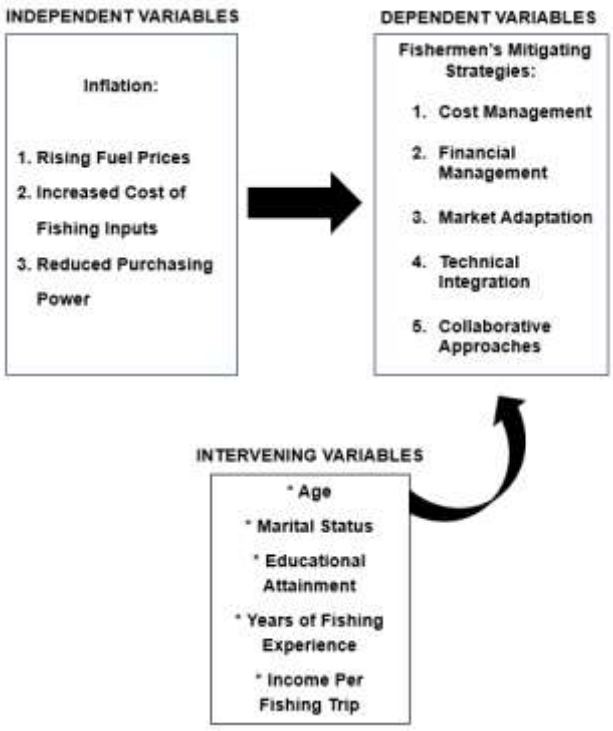

Figure 1. Conceptual Framework of the Study

II. METHODOLOGY

Research Design

This study employed a mixed-method research design, integrating both quantitative and qualitative approaches to obtain a comprehensive understanding of how inflation affects small-scale commercial fishermen and the mitigating strategies they employ in Barangay Kabatiol, Maasim, Sarangani Province. The quantitative component utilized a descriptive research design to determine the demographic and economic profile of the respondents and to examine the extent of the fishing strategies they employed in response to inflation. Descriptive research is appropriate when the objective is to identify characteristics, trends, and patterns within a population, making it suitable for systematically describing fishermen's responses to rising fuel prices, increased fishing input costs, and reduced purchasing power (McCombes, 2019). Through this approach, the study quantified the prevalence of various cost management, financial management, market adaptation, technological integration, and collaborative strategies. The qualitative component complemented the quantitative findings by providing deeper insights into fishermen's lived experiences and the challenges they encountered
in implementing selected strategies.

For the qualitative component, the study adopted a phenomenological approach through open-ended questions and key informant interviews to address the research question: "What were the challenges and barriers that prevented small-scale fishermen from using online platforms and participating in community-based marketing strategies?" This qualitative inquiry focused on fishermen's perceptions of technological, financial, institutional, and social constraints that limited their participation in alternative marketing channels. The phenomenological approach was appropriate because it enabled the researchers to examine how fishermen constructed meaning from their firsthand experiences of economic hardship, limited digital access, and community-level challenges. By emphasizing lived experiences, the approach allowed the study to capture fishermen's perspectives on digital literacy, market access, trust, and collaboration within their local context (Salmons, 2022).

The quantitative phase measured fishermen's mitigating strategies using a structured survey questionnaire that included items corresponding to cost management, financial management, market adaptation, technological integration, and collaborative approaches. Respondents were asked to indicate the extent to which they employed specific strategies to cope with inflation-related challenges. These survey items operationalized fishermen's economic strategies by quantifying their adaptive responses. Subsequently, the qualitative interviews and open-ended responses were designed to elaborate on the survey results by exploring why certain strategies, particularly online platforms and community-based marketing, were underutilized. The interview guide included questions related to fuel expenses, borrowing practices, access to markets, use of digital tools, and participation in cooperative or community initiatives. This alignment ensured that qualitative data directly explained the quantitative findings.

The integration of the mixed-method design strengthened the alignment between the research questions, variables, and data collection instruments. While the survey identified patterns and variations in fishermen's mitigating strategies across income levels, the qualitative data provided contextual explanations for these patterns. Fishermen shared how income constraints, educational background, experience, family responsibilities, and access to institutional support influenced their ability to engage in online platforms and community-based marketing. Through triangulation, the study linked numerical data on strategy use with

narrative accounts of economic and technological barriers, resulting in a more comprehensive understanding of fishermen's responses to inflation.

In summary, the explicit alignment between the research objectives, variables, survey items, and qualitative inquiry enhanced the coherence, credibility, and validity of the study. By combining quantitative measurement with qualitative explanation, the research provided a holistic assessment of how small-scale commercial fishermen mitigate the effects of inflation and why certain adaptive strategies remain underutilized. This approach supported the study's objective of generating context-sensitive insights and practical recommendations for strengthening the economic resilience of fishing communities.

Selection Process

The selection of participants in this study followed a purposive criterion sampling technique, ensuring that only individuals with direct, relevant, and first-hand experience in small-scale commercial fishing under inflationary conditions were included. Consistent with Creswell and Creswell's guidance on purposive sampling, this approach was appropriate because the study sought information-rich cases capable of providing meaningful insights into fishermen's economic strategies and lived experiences. Focusing on fishermen who were actively engaged in fishing allowed the researchers to obtain valid and context-specific data on how inflation affected livelihood decisions and adaptive practices.

Specifically, the respondents were selected based on the following criteria: (a) they were small-scale commercial fishermen residing in Barangay Kabatiol, Maasim, Sarangani Province; (b) they had at least one (1) year of continuous fishing experience; (c) fishing was their primary source of livelihood; (d) they were registered with appropriate government agencies; and (e) they were willing and able to provide informed responses regarding their economic strategies and challenges under inflation. These criteria ensured that participants had sufficient exposure to rising operational costs, income instability, and market conditions, enabling them to meaningfully describe their adaptive strategies.

A total of thirty (30) small-scale commercial fishermen who met the inclusion criteria were selected as respondents for the quantitative component of the study. Their responses provided numerical data on the extent to which various cost management, financial management, market adaptation, technological integration, and collaborative strategies were employed. From among these respondents, a subset of participants was purposively selected for the qualitative component based on their willingness to share detailed accounts and their ability to articulate the challenges and barriers they encountered, particularly in using online platforms and participating in community-based marketing strategies. This allowed the researchers to gather in-depth narratives that explained the quantitative patterns observed in the survey results.

This multi-level selection process ensured that both quantitative trends and qualitative explanations were adequately captured. By carefully selecting participants with relevant livelihood experience, the study strengthened the credibility, depth, and contextual validity of its findings. Generally, the purposive criterion sampling technique was appropriate for achieving the objectives of the study and for generating a comprehensive understanding of how small-scale commercial fishermen mitigate the effects of inflation in Barangay Kabatiol, Maasim, Sarangani Province.

Quantitative Respondents

This study involved two groups of individuals: survey respondents for the quantitative phase and research participants for the qualitative phase. This nomenclature follows the recommendation of Morse (1991), who distinguishes respondents as individuals who answer structured research instruments and participants as contributors who provide in-depth qualitative insights through narratives and personal accounts.

A total of thirty (30) small-scale commercial fishermen served as the survey respondents of the study. All invited respondents successfully completed the questionnaire, resulting in a 100% response rate with no attrition or withdrawal. Respondents were selected through purposive criterion sampling based on the following criteria.

Purposive sampling is appropriate when researchers intentionally select individuals who can provide relevant and experience-based information related to the research problem (Palinkas, 2020). In this study, the use of purposive sampling ensured that all respondents had sufficient exposure to inflation-related challenges such as rising fuel prices, increased fishing input costs, and income instability. This approach strengthened the validity and relevance of the quantitative findings by ensuring that responses were grounded in actual livelihood experiences and economic conditions faced by fishermen.

From among the survey respondents, a smaller number of research participants were purposively selected for the qualitative phase based on their willingness and ability to articulate their experiences in greater detail. These participants provided richer contextual explanations of the challenges and barriers that prevented fishermen from using online platforms and participating in community-based marketing strategies. Their narratives complemented the quantitative results and deepened the understanding of fishermen's adaptive strategies and constraints within a localized fishing community.

Qualitative Participants

For the qualitative phase, 3 participants were recruited from the pool of survey respondents using purposive criterion sampling. All three agreed to participate, resulting in no withdrawal or non-response. Each participant provided specialized and experience-based insights through semi-structured Key Informant Interviews (KII). Below are short descriptive profiles of the participants, as required:

Participant 1 (FP-1), is a small-scale fisherman from Danggan, Brgy. Kabatiol. His age fell within the bracket of 37 to 41 years, and he was married and a high school graduate. He had seven (7) to nine (9) years of fishing experience and earned within the income bracket of ₱1,000 to ₱3,000 per fishing trip. When he shared his experience regarding the challenges and barriers that prevented fishermen from using online platforms and participating in community-based marketing strategies, he stated that he primarily sold fish through online platforms such as Facebook, preferring pre-booked small-scale sales to obtain better prices. He also explained that they faced challenges such as strong competition among sellers and limited access to government benefits due to registration requirements. Despite these challenges, he emphasized that they valued technology for building trust with buyers and considered online selling an important support for their livelihood.

Participant 2 (FP-2), is a small-scale fisherman from Danggan, Brgy. Kabatiol. His age fell within the bracket of 27 to 31 years, and he was married and a high school graduate. He had four (4) to six (6) years of fishing experience and earned within the income bracket of ₱1,000 to ₱3,000 per fishing trip. When he shared his experience regarding the challenges and barriers that prevented fishermen from using online platforms and participating in community-based marketing strategies, he explained that he also used Facebook to sell fish and offered free delivery to attract more customers and increase income. He noted that his motivation came from his family and peers, and that he actively shared online marketing strategies learned from seminars with fellow fishermen. While competition sometimes affected sales, he found that online platforms provided valuable support for sustaining his livelihood.

Participant 3 (FP-3), is a small-scale fisherman from Barangay Kabatiol. His age fell within the bracket of 37 to 41 years, and he was married and a high school graduate. He had thirteen (13) years or more of fishing experience and earned within the income bracket of ₱1,000 to ₱3,000 per fishing trip. When he shared his experience regarding the challenges and barriers that prevented fishermen from using online platforms and participating in community-based marketing strategies, he stated that he relied mainly on fish port sales but struggled with declining prices due to the influence of vloggers and high transportation costs. To cope with these challenges, he occasionally posted online to reach buyers directly and advocated for the establishment of a local fish port in Maasim to reduce expenses. He also acknowledged the value of government-provided equipment but noted that many small-scale fishermen were excluded from assistance due to strict registration requirements.

These participants were purposively chosen because they represented a diversity of livelihood experiences, income levels, and adaptive practices, allowing the qualitative phase to capture a broad range of perspectives on the challenges and barriers faced by small-scale commercial fishermen, particularly in relation to the use of online platforms and participation in community-based marketing strategies. This approach was consistent with information-rich sampling strategies, as it enabled the study to generate in-depth insights into how inflation and contextual factors shaped fishermen's economic decisions and coping mechanisms (Campbell, 2020).

Research Instruments

The primary research instrument used in this mixed-method study was a researcher-made survey questionnaire, supplemented by a semi-structured interview guide for the qualitative phase. The use of a structured questionnaire is widely recognized as appropriate for descriptive research because it enables the systematic and quantifiable assessment of practices, behaviors, and perceptions across a defined group of respondents (Gray & Grove, 2020). Contemporary scholars also note that questionnaires are effective instruments for collecting standardized data when the objective was to measure the extent of practices and adaptive behaviors across multiple variables, particularly in socioeconomic and livelihood studies (Molina-Azorín, 2021).
In alignment with the objectives of this study, the questionnaire was designed based on the conceptual framework and an extensive review of related literature on inflation, livelihood vulnerability, and the economic strategies of small-scale fishermen. The instrument focused on gathering quantitative data regarding the extent to which fishermen employed various mitigating strategies in response to rising fuel prices, increased fishing input costs, and reduced purchasing power. These strategies included cost management, financial management, market adaptation, technological integration, and collaborative approaches, as well as selected demographic and economic characteristics relevant to the study.

The questionnaire consisted of two major parts. Part I captured the respondents' demographic and economic profile, including age range, marital status, educational attainment, years of fishing experience, and income per fishing trip. These variables were necessary to describe the respondents and to examine differences in the extent of strategies employed across income levels. Part II measured the extent to which fishermen employed specific economic strategies using a five-point Likert scale, ranging from 1 = Very Low Extent, 2 = Low Extent, 3 = Moderate Extent, 4 = High Extent, and 5 = Very High Extent. Likert-type scales remain one of the most widely accepted tools for measuring the extent of practices and adaptive behaviors due to their clarity, ease of interpretation, and statistical flexibility (Joshi, 2020).

Prior to formal administration, the survey instrument underwent expert validation to ensure clarity, relevance, and content accuracy. Validators with expertise in business, economics, fisheries, and research methodology evaluated whether the items adequately represented the constructs related to fishermen's economic strategies. A pilot test involving twenty (20) small-scale fishermen from a nearby community with similar characteristics was conducted to assess the instrument's reliability. The resulting Cronbach's alpha coefficients yielded acceptable values across all constructs, indicating strong internal consistency and coherence of items, consistent with established methodological standards (Boateng, 2020). Based on pilot feedback, selected items were refined to improve clarity, reduce redundancy, and enhance respondent comprehension.

For the qualitative phase, a semi-structured interview guide was developed to gather deeper insights from purposively selected fishermen. The guide consisted of open-ended questions designed to explore participants' lived experiences, particularly the challenges and barriers that prevented them from using online platforms and participating in community-based marketing strategies. Additional questions focused on income instability, access to technology, market conditions, and institutional support. The semi-structured format allowed the researchers to remain aligned with the study objectives while providing flexibility to probe emerging themes and clarify participants' responses. This approach is consistent with contemporary qualitative research practices that emphasize participant-centered inquiry and thematic depth (Salmons, 2022). The interview guide was likewise reviewed by experts to ensure clarity, cultural appropriateness, and alignment with the research questions.

Taken together, the survey questionnaire and the semi-structured interview guide constituted a comprehensive and methodologically sound set of instruments for collecting both quantitative and qualitative data. The survey captured measurable patterns in the extent of fishermen's mitigating strategies, while the interviews provided contextual explanations of the barriers and challenges influencing strategy adoption. This integration enabled systematic triangulation of data and enriched interpretation of findings. Overall, these instruments supported the rigor and coherence of the mixed-methods design and facilitated a holistic assessment of how small-scale commercial fishermen in Barangay Kabatiol mitigated the effects of inflation.

Data Collection

Before the formal data collection, the researchers conducted a pilot test to evaluate the clarity, reliability, and overall functionality of the survey questionnaire. This preliminary phase aimed to identify ambiguous items, assess internal consistency, and determine whether respondents could complete the instrument independently, as recommended in contemporary methodological literature (Taherdoost, 2022). Twenty (20) small-scale fishermen from a nearby community with characteristics similar to the study locale participated in the pilot test. Based on the results, necessary revisions were made to improve item wording, structure, and clarity.

Following the pilot test, the researchers sought and secured formal approval from the school principal to conduct the study outside school premises, in compliance with ethical guidelines for research involving human participants. After obtaining institutional clearance, permission was sought from local authorities and prospective respondents in Barangay Kabatiol. This process followed ethical standards emphasizing negotiated entry, transparency, and respect for community boundaries (Bhandari, 2023).

The recruitment process began with the researchers approaching eligible fishermen who met the inclusion criteria. The informed consent process involved explaining the nature, purpose, risks, benefits, and confidentiality measures of the study. Fishermen were informed that participation was voluntary, refusal carried no penalties, and withdrawal was allowed at any time without justification. To ensure comfort and clarity, participants were allowed to respond in Bisaya if preferred. Written consent was obtained prior to the administration of surveys or interviews, consistent with ethical standards on autonomy and participant protection (World Health Organization, 2022).

The quantitative phase began with the distribution of the researcher-made survey questionnaire, which contained items related to demographic and economic profiles and the extent of economic strategies employed in response to inflation. Each respondent was given approximately sixty (60) minutes to complete the instrument. The distribution process was organized systematically: one researcher provided instructions, another monitored completion, and a third retrieved and checked the questionnaires for completeness. Data were analyzed using frequency counts, percentages, weighted means, and reliability statistics, ensuring alignment with descriptive research principles and internal consistency standards (Field, 2020).

For the qualitative phase, Key Informant Interviews (KIIs) were conducted with three (3) purposively selected participants whose survey responses reflected rich and meaningful livelihood experiences. These participants were selected because they demonstrated strong insights into challenges related to rising operational costs, income instability, and barriers to using online platforms and participating in community-based marketing strategies. The interviews followed a semi-structured format, allowing the researchers to probe deeper into participants' experiences and interpretations of economic adaptation under inflationary pressure. Each interview lasted approximately sixty (60) minutes and was conducted in a quiet and comfortable location chosen by the participants to ensure privacy and ease. With informed consent, the interviews were audio-recorded to ensure accuracy during transcription and thematic analysis. Throughout the process, the researchers adhered to best practices in qualitative interviewing, including rapport-building, neutral questioning, and reflexive listening (Salmons, 2022). Data saturation was monitored to ensure that emerging themes were sufficiently developed and that no new substantive information emerged.

All data collected, including completed questionnaires, audio recordings, signed consent forms, and transcriptions, were stored securely in a password-protected digital folder accessible only to the research team. Hard copies were kept in a locked cabinet in the adviser's office to ensure confidentiality and data security. Digital and physical data were retained for one (1) year after the publication of the study, after which digital files were permanently deleted and hard copies were shredded, following ethical data disposal protocols (British Psychological Society, 2021).

Finally, a feedback session was planned in which the researchers summarized key findings and shared them with the participating fishermen. This step allowed participants to validate interpretations, clarify ambiguities, and benefit directly from the study's findings. Such feedback mechanisms are recognized as an ethical and practical component of community-engaged research (Tracy, 2020). Through these systematic procedures grounded in ethical conduct, methodological rigor, and contextual sensitivity, the researchers ensured that data collection remained aligned with the research questions and the overall mixed-method research design.

Data Analysis

The data analysis procedures in this study were systematically aligned with each research question and with the mixed-method research design, which integrated quantitative and qualitative approaches. Quantitative data were analyzed using descriptive statistical techniques, while qualitative data were examined through thematic analysis. Integration of findings occurred during the interpretation stage to ensure triangulation, convergence, and a comprehensive understanding of how inflation affected small-scale commercial fishermen and the strategies they employed to mitigate its impacts.

Analysis for Research Question 1: "What is the demographic profile of the respondents in terms of age, marital status, educational attainment, years of fishing experience, and income per fishing trip?" To answer this question, respondents' profile data were analyzed using frequency counts and percentage distributions. These descriptive statistics enabled the researchers to identify patterns in the fishermen's characteristics, which served as the contextual background for interpreting variations in economic strategies. Descriptive analysis was appropriate for summarizing categorical variables and presenting them in an organized and interpretable manner (Frey, 2022). The results were presented in tables to enhance clarity and ease of comparison.

Analysis for Research Question 2: "What is the extent of fishing strategies employed by the respondents in terms of cost management, financial management, market adaptation, technological integration, and collaborative approaches?" To determine the extent to which fishermen employed various mitigating strategies, the weighted mean was used as the primary statistical tool. This method was appropriate because the questionnaire items were measured using a five-point Likert scale. Weighted means provided an overall measure of the extent to which cost management, financial management, market adaptation, technological integration, and collaborative strategies were practiced. The results were interpreted using a predefined scale to describe the level of strategy utilization. The scoring and verbal interpretation followed this scheme:

Mean Range	Verbal Interpretation
4.21 – 5.00	Very High Extent
3.41 – 4.20	High Extent
2.61 – 3.40	Moderate Extent
1.81 – 2.60	Low Extent

These verbal interpretations were used to evaluate the extent to which small-scale commercial fishermen employed various economic strategies in response to inflation, including cost management, financial management, market adaptation, technological integration, and collaborative approaches. The use of Likert-based weighted means was consistent with best practices for assessing the extent of practices and adaptive behaviors in socioeconomic and livelihood research (Joshi, Kale, Chandel, & Pal, 2015; Widhiarso & Suprapto, 2022). The reliability of each construct was evaluated using Cronbach's alpha, with acceptable internal consistency set at $\alpha \geq 0.70$, following Field (2020). The reliability coefficients obtained from the pilot test guided the refinement of questionnaire items prior to formal data collection, thereby enhancing the accuracy and consistency of the measurement instrument.

Analysis for Research Question 3: Is there a significant difference in the extent of fishing strategies employed by the respondents when grouped according to income level? To address this question, weighted means were compared across income groups using One-way Analysis of Variance (ANOVA) to identify variations in the extent of strategy use. This comparison allowed the researchers to examine how income level influenced fishermen's capacity to adopt and sustain various mitigating strategies. The analysis highlighted patterns and differences in adaptive behavior across income brackets, providing insight into income-related constraints and opportunities.

Analysis for Research Question 4 (Qualitative): "What were the challenges and barriers that prevented small-scale fishermen from using online platforms and participating in community-based marketing strategies? Qualitative data from the Key Informant Interviews (KIIs) were analyzed using Braun and Clarke's (2021) six-phase thematic analysis, which was appropriate for identifying patterned meanings across fishermen's narratives. The analysis proceeded through the following phases. (1) Familiarization involved transcribing the interviews verbatim, repeatedly reading the transcripts, and noting initial impressions related to fishermen's experiences of inflation, market access, and livelihood challenges. (2) Generating Initial Codes involved identifying meaningful data segments and labeling them with codes such as "Digital Access Constraints and Social Pressure," "Marjet Power Imbalance and Online Price Undervaluation," "Technological Exclusion and Price Volatility." These codes reflected key challenges encountered by fishermen in adopting online platforms and community-based marketing strategies.

In (3) Searching for Themes, related codes were clustered into broader theme "Structural and Digital Barriers to Effective Online Market Participation". (4) Reviewing Themes involved examining the coherence of each theme across the dataset and ensuring that they accurately represented participants' experiences and perspectives. During (5) Defining and Naming Themes, the themes were refined and clearly articulated in relation to fishermen's income conditions, access to resources, and livelihood context. Finally, (6) Producing the Report involved integrating the thematic findings with the quantitative results to explain patterns in the extent of economic strategies employed by fishermen. This thematic approach aligned with phenomenological inquiry, as it allowed fishermen's lived experiences of economic pressure and adaptation to guide interpretation.

Because the study employed a mixed-method research design, integration occurred during the interpretation stage through triangulation. Quantitative trends, such as variations in the extent of strategy use across income levels, were compared with qualitative explanations that described why fishermen encountered difficulties in using online platforms and engaging in community-based marketing. This process enabled the researchers to explain the meanings behind numerical patterns and provided contextual depth to the findings, consistent with mixed-methods integration practices (Creswell & Plano Clark, 2022). Both quantitative and qualitative results informed the development of implications and recommendations presented in Chapter 5.

Finally, the qualitative findings and their implications were grounded in both numerical evidence and thematic insights. To enhance credibility, interpretations were validated through member checking, wherein selected participants reviewed summaries of the findings to confirm accuracy and resonance with their experiences (Tracy, 2020). In addition, expert review by faculty advisers was undertaken to ensure clarity, coherence, and methodological rigor. This systematic qualitative analysis process strengthened the trustworthiness of the study and ensured that the findings faithfully represented the lived experiences of small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province.

Trustworthiness of the Study

To ensure that the findings of this mixed-method study were credible, dependable, confirmable, and transferable, the researchers employed systematic procedures consistent with contemporary criteria for trustworthiness in qualitative and mixed-method research. As recommended by Nowell (2021) and Sharma (2020), methodological rigor was upheld by applying transparent, well-documented processes during data collection, analysis, and validation.

Credibility was strengthened by grounding all interpretations in the actual experiences and perspectives of the small-scale commercial fishermen who participated in the survey and Key Informant Interviews (KIIs). During the interviews, the researchers audio-recorded the sessions, maintained reflexive field notes, and conducted interviews in locations chosen by the participants to ensure comfort and enhance the accuracy of responses. These practices were consistent with the guidance of Castillo-Montoya (2021), who emphasized prolonged engagement, rapport-building, and contextual familiarity as essential to trustworthy qualitative inquiry.

In addition, member checking was conducted by returning summaries of the thematic interpretations to selected participants for verification, allowing them to confirm, clarify, or refine the meanings attributed to their statements. This process ensured that the findings accurately reflected fishermen's lived experiences and perspectives regarding the challenges and barriers they encountered in adopting online platforms and participating in community-based marketing strategies.

Dependability was ensured by maintaining clear and consistent documentation of all research activities, including the development and validation of instruments, pilot testing, data collection procedures, transcription, and data analysis. An audit trail

was established to document methodological decisions, adjustments, and justifications throughout the research process, consistent with the recommendations of Korstjens and Moser (2021). Peer debriefing sessions with the research adviser and panel experts further enhanced dependability by allowing external examination of the logic, accuracy, and coherence of the researchers' analytic procedures and interpretations.

Confirmability was achieved by practicing reflexivity throughout the research process. The researchers consciously bracketed their personal expectations and assumptions regarding inflation, livelihood vulnerability, and economic strategies of small-scale commercial fishermen to ensure that the findings emerged from participants' accounts rather than from researcher bias. Given the livelihood-sensitive nature of the study, particular care was taken to separate personal sympathies and value judgments from analytic interpretation.

Researcher journals and reflexive memos were maintained to document evolving insights, potential biases, and analytical decisions during data collection and analysis. This practice was consistent with the guidelines of Nowell and Albrecht (2020), who emphasized reflexive transparency as a key contributor to confirmability in qualitative research. To further strengthen confirmability, interview recordings, verbatim transcripts, coding matrices, and theme development records were systematically retained as part of a comprehensive audit trail, ensuring that conclusions could be traced directly to the original data.

Transferability was addressed by providing rich and detailed descriptions of the research context, the characteristics of the participants, and the livelihood conditions of small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province. The study carefully described the coastal setting, the fishing-dependent economic environment, and the conditions under which fishermen experienced rising operational costs and income instability. Detailed accounts of participants' demographic and economic profiles, as well as the extent of economic strategies they employed, were presented to contextualize the findings.

By offering such contextual information, readers were enabled to assess the extent to which the findings might be applicable to similar small-scale fishing communities facing inflationary pressures. As emphasized by contemporary interpreters of Lincoln and Guba, thick description allows readers to make informed judgments about the relevance and applicability of research findings to their own contexts (Pandey & Patnaik, 2021). Through this approach, the study supported transferability while recognizing that interpretations may vary depending on local economic, social, and institutional conditions.

Finally, triangulation supported the overall trustworthiness of the study. This included methodological triangulation through the integration of quantitative surveys and qualitative interviews, investigator triangulation through collaborative analysis among the research team, and data triangulation by comparing information obtained from fishermen with varying income levels and livelihood experiences within the same community. These triangulation strategies were consistent with the recommendations of Creswell and Creswell (2021) for enhancing the robustness and validity of mixed-method research.

Through these sustained efforts in ensuring credibility, dependability, confirmability, transferability, and triangulation, the researchers ensured that the study's results were trustworthy, ethically grounded, and reflective of the lived economic realities of small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province.

Ethical Considerations

The researchers ensured that all ethical principles were strictly observed throughout the conduct of the study, in accordance with the guidelines set by Colon National High School and contemporary ethical standards for research involving human participants. Ethical safeguards were implemented to prevent any form of exploitation, coercion, or harm, and to ensure that respondents and key participants were treated with respect, dignity, and fairness. Particular attention was given to the confidentiality, privacy, and autonomy of all small-scale commercial fishermen who participated in the study. These measures ensured that participants' personal information, livelihood experiences, and responses regarding inflation and economic strategies were protected and handled responsibly throughout the research process.

Informed Consent

Informed consent served as the cornerstone of ethical practice in this study. Before any survey or interview was conducted, the researchers provided a clear explanation of the study's purpose, scope, procedures, risks, benefits, and the voluntary nature of participation. Consent was obtained in writing from each adult respondent and key informant, in accordance with ethical requirements for studies involving human participants. The researchers also clarified that participants could choose to withdraw at any point without consequence. For the qualitative phase, additional consent for video and audio recording was obtained separately to ensure participants' comfort and transparency. This process safeguarded participant autonomy and promoted trust throughout the data collection.

Data Privacy and Confidentiality

The study adhered to the standards of the Institutional Review Board (IRB) and the Data Privacy Act of 2012 to ensure responsible handling of personal information. All respondents were informed that their identities would remain anonymous and that their responses would be reported only in aggregate or coded form. Survey questionnaires, interview transcripts, and consent forms were stored securely, with digital files encrypted and physical documents kept in a locked cabinet accessible only to the research team. Upon completion of the study and publication of the findings, all data will be destroyed following ethical disposal procedures, digital files will be permanently deleted, and hard copies will be shredded, to prevent unauthorized access or misuse of information.

Voluntary Participation

Participation in both the quantitative and qualitative phases of the study was entirely voluntary. No respondent was compelled to participate, and declining or withdrawing from the study did not entail penalties or loss of benefits. This assurance was emphasized during the informed consent process to ensure that willingness, not obligation, guided every participant's decision. Voluntary participation protected the integrity of the data and upheld the ethical principle of respect for persons.

Gender Sensitivity

The researchers maintained gender-sensitive practices throughout the study by ensuring that questions, interactions, and analyses were free from bias and respectful of all gender identities. Survey items and interview questions were worded in a gender-neutral manner to avoid stereotyping or exclusion. Additionally, the researchers acknowledged that lived experiences may differ across genders; therefore, all perspectives, regardless of gender, were valued equally and analyzed with fairness and inclusivity.

Cultural Sensitivity

Given that the study was conducted in Maasim, Sarangani Province, an area characterized by cultural diversity, the researchers were mindful of using respectful, non-discriminatory, and culturally appropriate language in the survey, interviews, and all field interactions. Participants were allowed to respond in Bisaya or English according to their comfort, ensuring inclusivity and reducing linguistic barriers. The researchers avoided questions or statements that might demean cultural beliefs or practices, reflecting a commitment to ethical tourism research, where respect for local cultures and communities is essential.

III. RESULTS AND DISCUSSION

This section presents the results and discussion of the data gathered to examine the effects of inflation on small-scale commercial fishermen and the economic strategies they employed to mitigate its impacts in Barangay Kabatiol, Maasim, Sarangani Province. The findings were derived from both quantitative data collected through a structured survey questionnaire and qualitative data obtained from Key Informant Interviews (KIIs) with selected fishermen who met the inclusion criteria. The quantitative results include the demographic and economic profile of the respondents in terms of age range, marital status, educational attainment, years of fishing experience, and income per fishing trip, as well as the extent of mitigating strategies employed in response to rising fuel prices, increased fishing input costs, and reduced purchasing power.

Meanwhile, the qualitative findings provide in-depth explanations of fishermen's lived experiences, perceptions, and decision-making processes under inflationary pressure, particularly highlighting the challenges and barriers that prevented them from using online platforms and participating in community-based marketing strategies. These narratives offer contextual insights into livelihood constraints, market access, technological limitations, institutional support, and community dynamics. Both quantitative and qualitative findings are systematically presented, analyzed, and discussed in direct relation to the research questions, as well as the theoretical and conceptual frameworks of the study. This integrated presentation allows for a comprehensive understanding of how small-scale commercial fishermen adapted to inflation and how contextual factors shaped their economic strategies within a localized fishing community.

QUANTITATIVE RESULTS AND DISCUSSION

This section presents the quantitative results of the study gathered from the survey questionnaires administered to small-scale commercial fishermen. It discusses the demographic and economic profile of the respondents, the extent of economic strategies they employed in response to inflation, and the difference in the extent of economic strategies they employed when grouped according to income level. The data were presented in tabular form and analyzed using frequency counts, percentage distributions, weighted means, and One-way Analysis of Variance to describe patterns, trends, and difference in fishermen's adaptive strategies. Each result was interpreted and supported with recent related literature to strengthen the discussion and situate the findings within existing studies on livelihood adaptation and inflation. Through this analysis, the study provided empirical evidence that may serve as a basis for developing context-sensitive interventions and policy recommendations aimed at strengthening the economic resilience of small-scale fishing communities.

Demographic and Economic Profile of the Respondents

This part presents the demographic and economic profile of the respondents in terms of age range, marital status, educational attainment, years of fishing experience, and income per fishing trip, as these characteristics were relevant in understanding variations in fishermen's economic conditions and adaptive responses to inflation. Understanding these characteristics provided essential context for interpreting differences in the extent of economic strategies employed by small-scale commercial fishermen. The complete results are presented in Table 1 below.

Table 1

Demographic and Economic Profile of the Respondents

VARIABLES		Frequency	Percentage
AGE RANGE	27 to 31 Years Old	3	10%
	32 to 36 Years Old	3	10%
	37 to 41 Years Old	9	30%
	42 to 46 Years Old	4	13.33%
	47 Years Old and Above	11	36.67%
	Total	**30**	**100%**
MARITAL STATUS	Married	27	90%
	Widowed	2	6.67%
	Legally Separated	1	3.33%
	Total	**30**	**100%**
EDUCATIONAL ATTAINMENT	Elementary Undergraduate	4	13.33%
	Elementary Graduate	5	16.67%
	High School Undergraduate	14	46.67%
	High School Graduate	6	2O%
	College Graduate	1	3.33
	Total	**30**	**100%**
YEARS OF FISHING EXPERIENCE	4 to 6 Years	1	3.33%
	7 to 9 Years	5	16.67%
	13 Years and Above	24	80%
	Total	**30**	**100%**
INCOME PER FISHING TRIP (INCOME LEVEL)	Php. 1000 to Php. 3,999	23	76.67%
	Php. 4,000 to Php. 6,999	5	16.67%
	Php. 7,000 to Php. 9,999	1	3.33%
	Php. 10,000 to Php. 12,000	1	3.33%
	Total	**30**	**100%**

Table 1 presents the demographic and economic profile of the thirty (30) small-scale commercial fishermen who participated in the study. In terms of age range, the findings show that the majority of respondents were 47 years old and above (36.67%), followed by those aged 37 to 41 years (30%), indicating that the fishing population in Barangay Kabatiol was largely composed of middle-aged to older fishermen. This result is consistent with studies by FAO (2022) and Pomeroy et al. (2020), which found that small-scale fisheries in Southeast Asia are increasingly dominated by older workers due to declining youth participation. Older fishermen tend to rely on traditional fishing and marketing practices, which may limit rapid adoption of digital platforms. However, their long exposure to livelihood shocks may also enhance adaptive decision-making. In contrast, some studies in Indonesia and Vietnam reported higher participation of younger fishers in digital marketing initiatives, suggesting that age-related technological adoption varies by context. The predominance of older fishermen in this study helps explain observed barriers to online platform use (Nguyen et al., 2021).

Furthermore, in terms of marital status, 90% of the respondents were married, reflecting the family-oriented nature of fishing livelihoods in coastal communities. This finding aligns with Béné, Headey, Haddad, & Jon Grebmer (2021), who emphasized that married fishermen often face higher household financial obligations, making them more vulnerable to inflationary pressures. At the same time, family responsibilities can motivate fishermen to adopt multiple coping strategies to stabilize income. Some studies suggest that family support encourages livelihood diversification, while others note that increased dependents can constrain risk-taking and innovation. In this study, the high proportion of married respondents underscores the importance of stable income per fishing trip and explains the cautious approach toward unfamiliar marketing platforms (Allison, Kurien, & Olesen, 2020).

Moreover, the results indicate that most respondents had high school education or lower, with 46.67% being high school undergraduates and only 3.33% college graduates. This pattern is consistent with findings by ILO (2021) and Israel, Briones, & Asis (2020), which reported low formal educational attainment among small-scale fishermen in the Philippines. Limited education has been linked to reduced access to financial services and digital tools, which may partly explain difficulties in using online platforms and community-based marketing strategies. However, recent studies have also shown that experiential knowledge can compensate for formal education in livelihood decision-making (Fabinyi et al., 2022). Thus, while low education may hinder technological integration, it does not necessarily prevent effective cost and financial management strategies.

Additionally, a notable finding is that 80% of the respondents had 13 years or more of fishing experience, indicating a highly experienced fishing population. This result supports earlier research by Cabral, Alino, & Lim (2021), which found that long-term fishing experience enhances adaptive capacity during economic and environmental shocks. Experienced fishermen tend to develop informal coping mechanisms such as adjusting fishing schedules, reducing trips, or strengthening buyer relationships. However, some studies argue that long experience may also reinforce resistance to change, particularly in adopting new technologies (Teh, Cabanban, & Sumaila, 2020). In this study, extensive experience appeared to support resilience but also contributed to cautious attitudes toward online marketing.

With respect to income level, 76.67% of respondents earned ₱1,000 to ₱3,999 per fishing trip, indicating relatively low and unstable earnings. This finding mirrors national fisheries data reported by PSA (2022) and recent livelihood studies by Anticamara and Go (2020), which highlighted declining real incomes among small-scale fishermen due to rising fuel prices and input costs. Low-income levels limit fishermen's ability to invest in technology, transportation, and cooperative ventures, reinforcing reliance on traditional market channels. In contrast, studies conducted in areas with strong cooperative systems reported higher average trip incomes, suggesting that institutional support plays a critical role in income stabilization (Santos, & Perez, 2022).

Implications for Small-Scale Fishing Communities

The findings of this study have important implications for small-scale fishing communities, particularly those facing persistent inflationary pressures. First, the predominance of older and highly experienced fishermen suggests that capacity-building interventions may be practical, experience-based, and context-sensitive, rather than heavily technical or theory-driven. Programs promoting online selling, digital platforms, or new marketing systems may consider age, digital literacy, and learning preferences to ensure inclusivity and effectiveness. Second, the generally low income per fishing trip highlights the urgent need for cost-reduction measures, such as fuel subsidies, affordable fishing inputs, and accessible microcredit facilities, to protect fishermen's purchasing power and livelihood sustainability.

Moreover, the limited educational attainment of many fishermen implies that simplified financial and digital literacy initiatives are necessary to support better financial management and gradual technological integration. Strengthening community-based and cooperative approaches may help fishermen pool resources, improve bargaining power, and stabilize income, especially during periods of high inflation. Finally, the strong family orientation of small-scale fishermen underscores that livelihood shocks extend beyond individuals to households, reinforcing the need for family-centered and community-based support programs. Completely, the study suggests that enhancing the resilience of small-scale fishing requires integrated interventions that address economic constraints, capacity gaps, and local realities simultaneously.

Extent of Fishing Strategies Employed

This section presents the results on the extent of fishing strategies employed by small-scale commercial fishermen in response to inflation. The findings presented in Tables 2–7 provide an overall assessment of the extent to which fishermen adopted various mitigating strategies, including cost management, financial management, market adaptation, technological integration, and collaborative approaches. These results indicate how fishermen responded to rising fuel prices, increased fishing input costs, and reduced purchasing power within their livelihood context. The quantitative findings serve as the basis for identifying commonly employed strategies as well as areas where adaptation was limited, thereby informing subsequent discussion and recommendations aimed at strengthening fishermen's economic resilience.

Table 2

Extent of Fishing Strategies Employed in terms of Cost Management

Indicators	Mean	Description
1. I strictly monitor and control daily fishing expenses, including fuel, ice, and food, supplies, to ensure profitability rising operational cost due to inflation.	4.20	High Extent
2. I schedule fishing trips more strategically, such as aligning them with peak catch seasons or favorable weather, to maximize fuel efficiency and reduce unnecessary trips that inflate costs	4.53	Very High Extent
3. I adopt shared resources systems like pooling boats, gears, or labor with fellow fishermen, to significantly cut down on individual capital and maintenance expenses.	3.47	High Extent
4. I invest in regular maintenance of boats and engines to prevent costly breakdowns and extend the lifespan of my equipment.	4.10	High Extent
5. I reduce cost pressures by utilizing local and sustainable bait and fishing methods, minimizing reliance on expensive commercial inputs that are vulnerable to inflation.	3.93	High Extent
Overall Mean	**4.05**	**High Extent**

Table 2 presents the extent to which small-scale commercial fishermen employed cost management strategies to mitigate the effects of inflation. The overall mean of 4.05, described as a High Extent, indicates that cost management was a widely practiced and central adaptive response among fishermen. This finding suggests that when faced with rising fuel prices, increased input costs, and reduced purchasing power, fishermen prioritized strategies that allowed them to control expenses and sustain profitability.

Among the indicators, the highest-rated strategy was scheduling fishing trips more strategically ($\bar{x}$ = 4.53, Very High Extent). This result implies that fishermen actively adjusted fishing schedules based on favorable weather conditions and peak catch periods to improve fuel efficiency and reduce unnecessary trips. Similar findings were reported by Teh et al. (2020) and Cabral et al. (2021), who noted that trip rationalization and effort optimization are among the most immediate and accessible coping strategies for small-scale fishers during economic shocks. Strategic scheduling requires minimal financial investment and relies heavily on experiential knowledge, which aligns with the high proportion of experienced fishermen in the study. In contrast, studies in regions with strong fuel subsidy programs reported less emphasis on trip optimization, as external support reduced the urgency to minimize fishing effort (Santos, & Perez, 2022).

The least-rated indicator was adopting shared resource systems such as pooling boats, gears, or labor ($\bar{x}$ = 3.47, High Extent), although it still fell within the "high extent" category. This relatively lower rating suggests that while collaboration existed, it was less consistently practiced than individual cost-control measures. This finding contrasts with studies by Pomeroy et al. (2020) and Béné et al. (2021), which emphasized collective action as a highly effective cost-reduction mechanism in small-scale fisheries. The lower reliance on shared resources in this study may be explained by issues of trust, ownership concerns, and coordination challenges within the community. As Fabinyi et al. (2022) explained, cooperative strategies often require strong institutional support and social cohesion, which may be uneven across fishing communities.

Other indicators, such as strict monitoring of daily fishing expenses ($\bar{x}$ = 4.20) and investment in regular boat and engine maintenance ($\bar{x}$ = 4.10), were also rated at a high extent. These findings are consistent with Anticamara and Go (2020), who observed

that preventive maintenance and expense tracking are critical survival strategies during periods of rising operational costs. Fishermen who invested in maintenance sought to avoid sudden breakdowns that could result in costly repairs and income loss. Meanwhile, the use of local and sustainable bait and fishing methods ($\bar{x}$ = 3.93) reflected efforts to reduce dependency on inflation-sensitive commercial inputs, a strategy similarly documented in recent Philippine fisheries studies (Israel et al., 2020).

Indeed, the results suggest that fishermen favored individual, experience-based, and immediately controllable strategies over more complex collaborative arrangements. While cost management practices were generally high, variations across indicators reflect differences in feasibility, trust, and required coordination.

Implications for Small-Scale Fishing Communities

The findings of Table 2 have several important implications for small-scale fishing communities. First, the strong reliance on strategic trip scheduling indicates that fishermen already possess valuable experiential knowledge that may be strengthened through weather forecasting support, fuel-efficiency training, and access to localized catch information. Second, the relatively lower adoption of shared resource systems suggests a need to strengthen trust-building mechanisms, fisher organizations, and cooperative governance structures to encourage collective cost reduction. Third, the emphasis on maintenance and expense monitoring highlights the importance of affordable repair services, access to spare parts, and basic financial literacy programs. Finally, promoting the use of local and sustainable inputs may reduce vulnerability to inflation while supporting environmental sustainability. Generally, enhancing cost management capacity requires a combination of individual skill reinforcement and community-level institutional support.

Table 3

Extent of Fishing Strategies Employed in terms of Financial Management

Indicators	Mean	Description
1. I diversify the catch and fishing areas to maintain income stability amid fluctuating fuel prices and market inflation.	4.63	Very High Extent
2. I adopt cost-efficient gear and fuel-saving technologies to reduce operational expenses and protect profit margins during periods of inflation.	3.97	High Extent
3. I turn to cooperative marketing and direct selling to consumers or local markets, allowing me to bypass middleman and secure better prices or my catch.	2.67	Moderate Extent
4. I save and plan contingencies, such as setting aside earnings during peak seasons to help me manage off-season periods and sudden inflationary spikes.	4.43	Very High Extent
5. I explore alternative livelihoods and value-adding activities, such as fish drying or processing, to supplement my income and reduce the financial impact of inflation on my fishing operations.	3.57	High Extent
Overall Mean	**3.85**	**High Extent**

Table 3 presents the extent to which small-scale commercial fishermen employed financial management strategies to mitigate the effects of inflation. The overall mean of 3.85, interpreted as a High Extent, indicates that financial management played a significant role in fishermen's adaptive responses. This finding suggests that beyond controlling costs, fishermen actively engaged in income-stabilizing and risk-reduction practices to cope with fluctuating fuel prices, market uncertainty, and inflationary pressures.

The highest-rated indicator was diversifying the catch and fishing areas to maintain income stability ($\bar{x}$ = 4.63, Very High Extent). This result indicates that fishermen frequently adjusted fishing locations and targeted multiple species to reduce income volatility. Similar findings were reported by Allison et al. (2020) and Cabral et al. (2021), who emphasized diversification as a core financial strategy for buffering livelihood shocks in small-scale fisheries. Diversification allows fishermen to spread risk across different resources and seasons, particularly when fuel prices and market demand fluctuate. In contrast, studies conducted in highly regulated fisheries reported limited diversification due to strict access rules, suggesting that local governance contexts strongly influence this strategy's feasibility. In Barangay Kabatiol, relatively flexible fishing practices may have enabled the high adoption of diversification strategies (Teh et al., 2020).

Conversely, the least-rated indicator was turning to cooperative marketing and direct selling to bypass middlemen ($\bar{x}$ = 2.67, Moderate Extent). This relatively low rating indicates that while cooperative and direct marketing are recognized as beneficial, they were not widely practiced. This finding contrasts with studies by Pomeroy et al. (2020) and Santos et al. (2021), which documented higher income gains among fishermen engaged in cooperative marketing systems. The moderate adoption observed in this study may be explained by barriers such as limited organizational capacity, lack of trust among fishermen, inadequate market infrastructure, and challenges in collective coordination. Fabinyi et al. (2022) further explained that cooperative approaches require strong institutional support and sustained leadership, which may not be consistently available in all fishing communities.

Other indicators revealed important patterns. The strategy of saving and planning contingencies ($\bar{x}$ = 4.43, Very High Extent) demonstrated that fishermen prioritized financial preparedness by setting aside earnings during peak seasons. This finding aligns with Béné et al. (2021), who found that precautionary savings enhance household resilience during economic shocks. Meanwhile, the use of cost-efficient gear and fuel-saving technologies ($\bar{x}$ = 3.97, High Extent) reflected moderate technological

adaptation, consistent with Nguyen et al. (2021), who noted that adoption often depends on affordability and access to capital. The exploration of alternative livelihoods and value-adding activities ($\bar{x}$ = 3.57, High Extent) suggested that fishermen sought supplementary income sources, although engagement remained constrained by capital, skills, and market access, an issue similarly observed in Philippine coastal communities (Israel et al., 2020).

In sum, the findings indicate that fishermen favored individual and household-level financial strategies, such as diversification and saving, over collective and market-structural strategies, such as cooperative marketing. This pattern reflects a pragmatic response to inflation, where fishermen relied on strategies within their immediate control.

Implications for Small-Scale Fishing Communities

The results of Table 3 have several important implications for small-scale fishing communities. First, the strong reliance on diversification highlights the need to support sustainable multi-species fishing practices and provide timely information on seasonal availability and fishing grounds. Second, the low utilization of cooperative marketing underscores the importance of strengthening fisher organizations, building trust, and improving market infrastructure to enable collective selling and better price negotiation. Third, the high emphasis on saving and contingency planning suggests that fishermen are receptive to financial literacy programs, savings schemes, and accessible microfinance tailored to fishing cycles. Finally, promoting value-adding activities requires targeted training, starter capital, and assured market access. Overall, enhancing financial management capacity among fishermen demands integrated support that combines individual financial skills with community-level institutional development.

Table 4

Extent of Fishing Strategies Employed in terms of Technological Integration

Indicators	Mean	Description
1. I use GPS and fish finders to locate fish-rich areas before or during fishing.	2.97	Moderate Extent
2. I am using solar-powered boats to reduce fuel costs.	3.47	High Extent
3. I participated in discussions and training sessions about new fishing technologies to improve my knowledge.	3.37	Moderate Extent
4. I change my fishing routes based on real-time weather updates from digital platforms.	4.33	Very High Extent
5. I practice fuel-saving techniques learned from technological tools and training.	3.50	High Extent
Overall Mean	**3.53**	**High Extent**

Table 4 presents the extent to which small-scale commercial fishermen integrated technology into their fishing operations as a strategy to cope with inflation. The overall mean of 3.53, described as a High Extent, indicates that technological integration was generally practiced, although the degree of adoption varied across specific indicators. This variation suggests that fishermen selectively adopted technologies that were affordable, accessible, and immediately useful in reducing costs or risks.

The highest-rated indicator was changing fishing routes based on real-time weather updates from digital platforms ($\bar{x}$ = 4.33, Very High Extent). This finding indicates that fishermen widely relied on weather applications, social media updates, or mobile advisories to avoid unsafe conditions and unnecessary fuel consumption. Similar results were reported by Cabral et al. (2021) and Nguyen et al. (2021), who found that weather-related digital information is among the most commonly adopted technologies in small-scale fisheries because it is low-cost and easily accessible via mobile phones. Real-time weather information allows fishermen to make informed decisions without requiring expensive equipment, making it a practical response to inflation-driven fuel constraints. In contrast, studies in remote coastal areas with limited internet access reported lower reliance on digital weather tools (Teh et al., 2020), highlighting the role of connectivity in shaping technological adoption.

In contrast, the least-rated indicator was using GPS and fish finders to locate fish-rich areas ($\bar{x}$ = 2.97, Moderate Extent). This relatively lower rating suggests that while such technologies are recognized as useful, their adoption remained limited. This finding is inconsistent with studies in more capital-intensive fisheries, where GPS and fish finders significantly improved catch efficiency and income stability (Santos, Dikson, & Quilang, 2022). However, Fabinyi et al. (2022) explained that high upfront costs, maintenance expenses, and limited technical skills often prevent small-scale fishermen from adopting advanced fishing equipment. In the context of this study, low income per fishing trip and inflationary pressure likely constrained fishermen's ability to invest in such technologies, explaining the moderate extent of use.

Other indicators further illustrate selective technological adoption. The use of solar-powered boats ($\bar{x}$ = 3.47, High Extent) and fuel-saving techniques learned from technological tools and training ($\bar{x}$ = 3.50, High Extent) suggests growing awareness of energy-efficient innovations. These findings align with Béné et al. (2021), who emphasized that rising fuel prices encourage experimentation with alternative energy sources and efficiency measures. However, participation in discussions and training sessions about new fishing technologies ($\bar{x}$ = 3.37, Moderate Extent) remained relatively limited, possibly due to time constraints, lack of access to training programs, or insufficient institutional outreach, as noted by Israel et al. (2020).

In summary, the results indicate that fishermen favored information-based and low-cost technologies over capital-intensive equipment. Technological integration was thus shaped not only by perceived usefulness but also by affordability, accessibility, and immediate relevance to inflation-related challenges.

Implications for Small-Scale Fishing Communities

The findings of Table 4 have important implications for small-scale fishing communities. First, the high reliance on digital weather updates suggests that expanding mobile-based advisory services may further enhance safety and fuel efficiency. Second, the limited use of GPS and fish-finding equipment highlights the need for subsidies, shared equipment schemes, or cooperative ownership models to make advanced technologies more accessible. Third, moderate participation in technology-related training underscores the importance of localized, flexible, and livelihood-sensitive training programs that fit fishermen's schedules. Finally, promoting energy-efficient technologies, such as solar-powered boats, requires financial support mechanisms and technical assistance. Overall, strengthening technological integration in small-scale fisheries demands policies that reduce cost barriers while building skills and institutional support.

Table 5

Extent of Fishing Strategies Employed in terms of Market Adaptation

Indicators	Mean	Description
1. I diversify my catch by targeting high-demand but low-cost fish species.	3.97	High Extent
2. I sell my catch directly to consumers through barangay-based markets.	2.40	Low Extent
3. I use online platforms (e.g., Facebook Marketplace or any social media) to sell my catch and reduce middleman costs.	1.80	Very Low Extent
4. I participate in community discussions or training about alternative marketing strategies.	2.47	Low Extent
5. I have tried selling processed seafood (e.g., dried fish, smoked fish) to add my income.	3.37	Moderate Extent
Overall Mean	**2.80**	**Moderate Extent**

Table 5 presents the extent to which small-scale commercial fishermen employed market adaptation strategies to cope with inflation. The overall mean of 2.80, interpreted as a Moderate Extent, indicates that market adaptation was less widely practiced compared with cost management, financial management, and technological integration. This suggests that while fishermen recognized the importance of adjusting marketing practices, structural and contextual barriers limited their ability to fully engage in alternative market strategies.

The highest-rated indicator was diversifying catch by targeting high-demand but low-cost fish species ($\bar{x}$ = 3.97, High Extent). This finding implies that fishermen actively responded to market demand by adjusting species targeted to ensure quicker sales and more stable income. Similar results were reported by Cabral et al. (2021) and Anticamara and Go (2020), who observed that species diversification is a common and accessible market response among small-scale fishermen facing price volatility. By focusing on species with consistent demand, fishermen minimized the risk of unsold catch and reduced losses associated with fluctuating market prices. In contrast, studies in areas with stricter species regulations found limited flexibility in catch diversification (Teh et al., 2020), indicating that governance contexts shape this strategy's feasibility.

In contrast, the least-rated indicator was using online platforms such as Facebook Marketplace or social media to sell catch ($\bar{x}$ = 1.80, Very Low Extent). This result highlights a significant gap in digital market participation despite the potential of online selling to reduce middleman costs. This finding contradicts studies by Nguyen et al. (2021) and Santos et al. (2022), which documented increased incomes among fishermen who actively used digital platforms for direct selling. However, several studies help explain this discrepancy. Fabinyi et al. (2022) and Israel et al. (2020) emphasized that limited digital literacy, unreliable internet access, lack of trust in online transactions, and logistical challenges such as delivery constrain online market adoption in many coastal communities. These barriers were consistent with the qualitative findings of the present study.

Other indicators further reinforce the limited scope of market adaptation. Selling directly to consumers through barangay-based markets ($\bar{x}$ = 2.40, Low Extent) and participation in community discussions or training on alternative marketing strategies ($\bar{x}$ = 2.47, Low Extent) suggest weak institutional and community support for collective marketing initiatives. These findings differ from those of Pomeroy et al. (2020), who reported that organized fisher groups and cooperatives significantly enhance market access and bargaining power. Meanwhile, processing seafood to add income ($\bar{x}$ = 3.37, Moderate Extent) indicates some engagement in value-adding activities, although participation remained limited. Studies by Béné et al. (2021) explain that value-adding often requires capital, equipment, and assured markets, which may not be readily available to small-scale fishermen.

In conclusion, the results indicate that fishermen favored market strategies that could be implemented individually and immediately, such as species diversification, while structural and technology-dependent strategies, particularly online selling and organized marketing, were underutilized.

Implications for Small-Scale Fishing Communities

The findings of Table 5 have important implications for small-scale fishing communities. First, the strong reliance on species diversification suggests the need to support sustainable and market-informed fishing practices, including access to real-time market demand information. Second, the very low use of online platforms highlights an urgent need for digital literacy training, improved internet infrastructure, and logistical support, such as delivery systems tailored to fishing communities. Third, the low participation in barangay-based markets and marketing trainings underscores the importance of strengthening fisher organizations, cooperatives, and local market facilities. Finally, while value-adding activities showed moderate adoption, expanding these practices requires technical training, start-up capital, and assured market linkages. In sum, improving market adaptation among

small-scale fishermen demands integrated interventions that address digital, institutional, and infrastructural barriers simultaneously.

In addition, the moderate overall level of market adaptation indicates that inflation-related challenges cannot be addressed through production-side strategies alone. Without improved access to fair and efficient markets, gains from cost management, financial planning, and technological integration may remain limited. This finding suggests the need for stronger local government and private sector involvement in developing inclusive market systems that reduce dependence on middlemen and stabilize fish prices. Establishing community-supported marketing channels, strengthening price information systems, and providing incentives for direct selling may enhance fishermen's bargaining power. Ultimately, addressing market adaptation gaps is essential for translating fishermen's adaptive efforts into sustained income stability and long-term economic resilience.

Table 6

Extent of Fishing Strategies Employed in terms of Collaborative Approach

Indicators	Mean	Description
1. I actively participate in local Community-Based Resource Management (CBRM) programs to help manage and conserve marine resources.	2.77	Moderate Extent
2. I engage in discussions and decision-making processes with fellow fishermen regarding sustainable fishing practices.	4.17	High Extent
3. I share and borrow fishing tools, boats, or fuel with other fishermen to reduce operational costs and promote cooperation.	3.27	Moderate Extent
4. I follow fishing regulations, such as closed seasons and catch limits, to protect fish populations and habitats.	3.63	High Extent
5. I encourage other fishermen to adopt sustainable fishing practices for the long-term benefit of our fishing community.	4.33	Very High Extent
Overall Mean	**3.63**	**High Extent**

Table 6 presents the extent to which small-scale commercial fishermen employed collaborative approaches as part of their economic strategies in response to inflation. The overall mean of 3.63, described as a High Extent, indicates that collaboration played an important role in fishermen's adaptive responses. This finding suggests that despite financial and market constraints, fishermen recognized the value of collective action in sustaining livelihoods and managing shared resources.

The highest-rated indicator was encouraging other fishermen to adopt sustainable fishing practices for the long-term benefit of the community ($\bar{x}$ = 4.33, Very High Extent). This result reflects a strong sense of communal responsibility and awareness of long-term resource sustainability. Similar findings were reported by Béné et al. (2021) and Cabral et al. (2021), who observed that peer influence and informal leadership within fishing communities play a critical role in promoting sustainable practices. Encouraging sustainability requires minimal financial resources and relies primarily on shared values and social norms, making it a feasible collaborative strategy during inflationary periods. In contrast, studies conducted in highly commercialized fisheries reported weaker peer-driven sustainability efforts due to competitive pressures (Teh et al., 2020), suggesting that community cohesion influences collaborative behavior.

In contrast, the least-rated indicator was active participation in local Community-Based Resource Management (CBRM) programs ($\bar{x}$ = 2.77, Moderate Extent). This relatively lower engagement suggests that while fishermen valued sustainability, formal participation in structured management programs was limited. This finding contrasts with studies by Pomeroy et al. (2020) and Santos et al. (2022), which found that well-supported CBRM initiatives improved compliance and livelihood outcomes. However, Fabinyi et al. (2022) explained that limited participation in CBRM often results from factors such as time constraints, limited awareness, perceived bureaucratic burden, and lack of immediate economic incentives. These explanations are consistent with the moderate extent observed in this study.

Other indicators further illustrate patterns of collaboration. Engagement in discussions and decision-making with fellow fishermen ($\bar{x}$ = 4.17, High Extent) indicates strong informal communication and collective problem-solving within the community. Similarly, compliance with fishing regulations ($\bar{x}$ = 3.63, High Extent) reflects awareness of resource protection, although enforcement challenges may persist. Meanwhile, sharing fishing tools, boats, or fuel ($\bar{x}$ = 3.27, Moderate Extent) was practiced to a lesser degree, possibly due to concerns about equipment ownership, maintenance responsibilities, and trust, issues highlighted by Israel et al. (2020) in Philippine fishing communities.

To conclude, the findings suggest that fishermen were more inclined toward informal, relationship-based collaboration than formal, institution-led initiatives. Collaboration was strongest when it relied on social norms and peer influence, and weaker when it required formal organizational participation or shared physical assets.

Implications for Small-Scale Fishing Communities

The results of Table 6 have several important implications for small-scale fishing communities. First, the strong peer-driven promotion of sustainable practices indicates an opportunity to leverage local leaders and informal networks in promoting both sustainability and economic resilience. Second, the moderate participation in CBRM programs highlights the need to simplify program structures, improve awareness, and align conservation initiatives with short-term livelihood benefits. Third, the limited sharing of physical resources suggests that trust-building and clear rules for shared use are necessary to strengthen collective cost-

reduction strategies. Finally, reinforcing collaborative decision-making platforms can enhance collective responses to inflation and market uncertainty.

Moreover, collaboration may be integrated into broader livelihood and market interventions. Strengthening fisher organizations, providing incentives for collective action, and linking collaboration with access to financial services and markets may amplify the benefits of cooperation. Indeed, fostering collaboration in small-scale fishing communities requires a balanced approach that combines social capital, institutional support, and tangible economic incentives to ensure both sustainability and livelihood security.

Table 7

Summary of the Extent of Fishing Strategies Employed

Variables	Mean	Description
Cost Management	4.05	High Extent
Financial Management	3.85	High Extent
Technological Integration	3.53	High Extent
Market Adaptation	2.80	Moderate Extent
Collaborative Approach	3.63	High Extent
Overall Mean	**3.57**	**High Extent**

Table 7 summarizes the overall extent to which small-scale commercial fishermen employed various economic strategies to mitigate the effects of inflation. The overall mean of 3.57, interpreted as a High Extent, indicates that fishermen actively adopted multiple strategies to cope with rising fuel prices, increased fishing input costs, and reduced purchasing power. This result reflects a generally adaptive and resilient response among fishermen, although the extent of adoption varied across strategy categories.

Among the strategies, cost management emerged as the highest-rated ($\bar{x}$ = 4.05, High Extent). This finding suggests that fishermen prioritized immediate and controllable actions, such as monitoring expenses, optimizing fishing schedules, and maintaining equipment, to protect income under inflationary pressure. Similar patterns were observed by Anticamara and Go (2020) and Cabral et al. (2021), who reported that cost containment is often the first line of defense for small-scale fishermen facing economic shocks. Cost management strategies require minimal institutional support and rely heavily on experiential knowledge, making them accessible even to low-income fishermen. In contrast, studies in fisheries with strong subsidy systems reported lower emphasis on cost management due to external financial buffers (Santos et al., 2022), indicating that policy environments influence strategy prioritization.

In contrast, market adaptation registered the lowest mean ($\bar{x}$ = 2.80, Moderate Extent). This result indicates that while fishermen recognized the importance of improving market access and reducing dependence on middlemen, they faced significant barriers in implementing such strategies. This finding diverges from studies by Nguyen et al. (2021) and Pomeroy et al. (2020), which found that direct selling and digital marketing significantly enhanced fisher incomes in communities with better infrastructure and organizational support. However, the lower adoption observed in this study is consistent with explanations offered by Fabinyi et al. (2022) and Israel et al. (2020), who highlighted constraints such as limited digital literacy, weak cooperative structures, logistical challenges, and lack of market facilities in many Philippine fishing communities.

Other strategies, including financial management ($\bar{x}$ = 3.85, High Extent), collaborative approaches ($\bar{x}$ = 3.63, High Extent), and technological integration ($\bar{x}$ = 3.53, High Extent), were moderately to highly practiced. Financial management strategies such as saving, diversification, and livelihood supplementation align with findings by Béné et al. (2021), who emphasized precautionary behavior as a key resilience mechanism. Collaborative approaches reflected strong social capital and peer influence, consistent with Teh et al. (2020), while technological integration focused mainly on low-cost and information-based tools, as explained by Cabral et al. (2021). Collectively, these results suggest that fishermen favored strategies that were within individual or community control, while strategies requiring external infrastructure and institutional support were less developed.

In summary, the findings indicate a hierarchy of adaptation, where fishermen prioritized cost control and financial self-management over market restructuring. This pattern underscores the role of structural constraints in shaping livelihood strategies under inflation.

Implications for Small-Scale Fishing Communities

The results of Table 7 have important implications for small-scale fishing communities. First, the strong emphasis on cost management indicates that fishermen are already engaging in prudent economic behavior; thus, support programs should focus on enhancing existing practices through fuel-efficiency training, maintenance support, and access to affordable fishing inputs. Second, the moderate performance of market adaptation highlights the need for targeted interventions in market systems, including digital infrastructure, fisher-friendly logistics, and the strengthening of cooperatives to reduce dependence on middlemen. Third, the relatively high adoption of financial and collaborative strategies suggests readiness for community-based savings schemes, cooperative financing, and shared-resource initiatives.

In addition, the overall high extent of strategy adoption demonstrates that fishermen possess adaptive capacity but are constrained by external conditions. Addressing inflation-related challenges therefore requires integrated policy responses that go beyond individual coping mechanisms. Local government units, national agencies, and development partners must work together to align livelihood support, market access, technology provision, and institutional strengthening. Without addressing structural barriers, particularly in market adaptation, even well-managed cost and financial strategies may not translate into sustained income stability. Ultimately, enhancing the resilience of small-scale fishing communities depends on combining fishermen's adaptive efforts with inclusive and supportive economic systems.

Difference in the Extent of Fishing Strategies Employed

This study also determined the difference in the extent of fishing strategies employed to mitigate inflation when the respondents are grouped according to income level. Using the One-way Analysis of Variance (ANOVA), the complete results were generated as shown in Table 8 below.

Table 8

Difference in the Extent of Fishing Strategies Employed According to Income Level

Source of Variation	Sum of Squares (SS)	Degrees of Freedom (df)	F	P-Value	Description
Between Groups	7.85	3	4.17	0.01	With Significant Difference
Within Groups	18.20	26			
Total	**26.05**	**29**			

Table 8 presents the results of the one-way Analysis of Variance (ANOVA) conducted to determine whether there was a significant difference in the extent of fishing strategies employed by small-scale commercial fishermen when grouped according to income level. The results show an F-value of 4.17 with a p-value of 0.01, indicating a statistically significant difference in the extent of strategies employed across different income groups. This finding suggests that income level played a significant role in shaping fishermen's capacity to adopt and sustain various economic strategies in response to inflation.

The presence of significant differences implies that fishermen with relatively higher income per fishing trip were able to employ mitigating strategies more extensively than those with lower income. Similar findings were reported by Cabral et al. (2021) and Béné et al. (2021), who observed that income level strongly influences adaptive capacity in small-scale fisheries. Fishermen with higher income are better positioned to absorb short-term losses, invest in cost-saving technologies, diversify livelihoods, and participate in cooperative or market-based initiatives. In contrast, lower-income fishermen often prioritize immediate survival needs, limiting their ability to engage in strategies that require upfront costs or delayed returns.

However, this finding contrasts with studies such as Fabinyi et al. (2022), which argued that experiential knowledge and social networks can sometimes compensate for low income in shaping adaptive behavior. While informal knowledge-sharing and peer collaboration were evident in the present study, the significant ANOVA result indicates that financial capacity remained a critical enabling factor, particularly for strategies related to technology use, market adaptation, and financial planning. This suggests that while social capital is important, it does not fully offset the constraints imposed by limited income under inflationary pressure.

Other studies provide explanatory insight into this result. Pomeroy et al. (2020) emphasized that access to financial resources determines whether fishermen can transition from short-term coping strategies to more sustainable adaptive strategies. Similarly, Israel et al. (2020) explained that income disparities in Philippine fishing communities often lead to unequal access to technology, training, and market opportunities. These explanations align with the present findings, where income level significantly differentiated the extent to which fishermen could adopt economic strategies.

To conclude, the results of Table 8 reinforce the idea that inflation amplifies existing income inequalities within small-scale fishing communities. While all fishermen faced rising costs and reduced purchasing power, those with higher income were more capable of responding proactively, whereas those with lower income remained more vulnerable and constrained in their strategic choices.

Implications for Small-Scale Fishing Communities

The significant difference in strategy adoption across income levels has important implications for small-scale fishing communities. First, it highlights the need for targeted support for low-income fishermen, who are less able to adopt adaptive strategies despite facing the same inflationary pressures. Interventions such as fuel subsidies, microcredit access, and input support programs may help reduce inequality in adaptive capacity. Second, livelihood programs may be income-sensitive, recognizing that uniform interventions may disproportionately benefit higher-income fishermen.

Moreover, strengthening financial inclusion mechanisms, such as savings groups, cooperative lending, and insurance schemes, may help lower-income fishermen gradually build resilience. Capacity-building initiatives in technology use, market adaptation, and financial management may be accompanied by material and financial assistance, ensuring that training translates into actual practice. Finally, addressing income-based disparities is essential for promoting inclusive resilience and preventing inflation from further marginalizing the most economically vulnerable fishermen.

QUALITATIVE RESULTS AND DISCUSSION

This section presents the qualitative findings of the study derived from the
Key Informant Interviews (KIIs) conducted with selected small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province. The qualitative phase was designed to complement and deepen the quantitative results by examining the challenges and barriers that prevented fishermen from using online platforms and participating in community-based marketing strategies, insights that could not be fully captured through survey data alone.

Through semi-structured interviews, the participants provided detailed narratives describing their experiences with marketing their catch, accessing digital platforms, engaging in collective selling initiatives, and coping with inflation-related constraints. Their accounts highlighted barriers such as limited digital literacy, inadequate internet access, high transportation costs, competition among sellers, lack of organizational support, and restrictive registration requirements for government assistance.

Thematic analysis was employed to organize interview responses into meaningful themes that reflected shared patterns as well as variations in fishermen's experiences and adaptive decision-making processes.

These qualitative insights enriched the interpretation of the quantitative findings by explaining why market adaptation strategies, particularly online selling and community-based marketing, were least practiced, despite their potential to reduce middleman dependence. By integrating fishermen's voices with numerical data on strategy use, the qualitative findings strengthened the overall conclusions of the study and provided a more comprehensive understanding of how structural, technological, and institutional barriers shape the economic strategies of small-scale commercial fishermen under inflationary pressure.

What were the challenges and barriers that prevented small-scale fishermen from using online platforms and participating in community-based marketing strategies?

This section presents the qualitative findings on the lived experiences of small-scale commercial fishermen regarding the challenges and barriers that prevented them from using online platforms and participating in community-based marketing strategies. The findings were derived from Key Informant Interviews (KIIs) and were analyzed using a systematic thematic analysis that involved careful coding, constant comparison of responses, and clustering of related ideas to ensure rigor, credibility, and transparency in interpretation. Interview transcripts were thoroughly reviewed and segmented into meaningful units based on fishermen's experiences with digital selling, pricing, competition, access to technology, and market participation under inflationary conditions.

After generating initial codes, the researchers condensed participants' statements into core meanings while preserving the essence of their experiences. These core ideas were then examined through cross-case analysis, allowing similarities and variations across informants' responses to be identified. This process enabled the researchers to capture recurring patterns related to digital access constraints, online market pressures, and structural limitations affecting fishermen's capacity to adapt their marketing strategies.

The qualitative analysis revealed a dominant theme cluster identified as **"Structural and Digital Barriers to Effective Online Market Participation."** Within this cluster, three interrelated themes emerged. The first theme, ***Digital Access Constraints and Social Pressure***, reflected fishermen's difficulties arising from unreliable internet connectivity, lack of affordable Wi-Fi, copied online posts, and community gossip, all of which heightened stress and reduced the sustainability of online selling. The second theme, ***Market Power Imbalance and Online Price Undervaluation***, highlighted the influence of vloggers and online buyers who demanded discounts, publicly criticized prices, and contributed to unsold catch despite fishermen's efforts to offer competitive pricing and free delivery. The third theme, ***Technological Exclusion and Price Volatility***, captured experiences of delayed participation due to lack of digital devices, fluctuating prices driven by online influencers, and continued buyer preference for traditional fish port transactions over online platforms.

Taken together, these themes illustrate how structural, technological, and market-related constraints limited the effectiveness of online selling as a market adaptation strategy. Although digital platforms were perceived as potentially beneficial, fishermen's experiences showed that unequal power relations, unstable pricing mechanisms, limited digital capacity, and weak institutional support undermined their ability to rely on online marketing to mitigate inflationary pressures.

In conclusion, the qualitative findings complement the quantitative results by explaining why market adaptation strategies, particularly online selling and community-based marketing, were practiced to a low extent, despite their potential to reduce dependence on middlemen. By systematically organizing fishermen's narratives into coherent themes, this analysis provides deeper insight into how inflation, digital exclusion, and market structures intersect to shape fishermen's economic strategies. These findings underscore the need for inclusive digital support, fair market regulation, and strengthened local marketing systems to enhance the economic resilience of small-scale fishing communities in Barangay Kabatiol, Maasim, Sarangani Province.

Table 9

Challenges and Barriers that Prevented Small-scale Fishermen From Using Online Platforms and Participating in Community-Based Marketing Strategies

Significant Statement	Code	Formulated Mean	Theme Cluster
"Selling online became difficult for me due to copied posts, growing competition, and unreliable mobile data. Without access to affordable Wi-Fi and facing gossip from the community, it became stressful. With unstable income, I couldn't always afford the cost of promoting my products online."	FI-1 (Dodong)	Digital Access Constraints and Social Pressure	Structural and Digital Barriers to Effective Online Market Participation
"Selling online wasn't easy. The vloggers demanded discounts or criticized my prices, even with free delivery. Despite my effort, some posts didn't attract buyers, and fish remained unsold."	FI-2 (Nel)	Market Power Imbalance and Online Price Undervaluation	
"Online selling was challenging. Vloggers influenced prices, causing income loss. Even online, prices kept changing. I had no cellphone at first, so I couldn't promote our catch until we bought one. Most buyers still preferred buying directly at the port."	FI-3 (Arb)	Technological Exclusion and Price Volatility	

The first theme, **Digital Access Constraints and Social Pressure**, highlights how limited digital infrastructure and social dynamics constrained fishermen's participation in online marketing. FP-1 (Dodong) described unreliable mobile data, lack of affordable Wi-Fi, and the high cost of online promotion as significant barriers. Similar findings were reported by Cabral et al. (2021), who noted that digital exclusion remains a major constraint for small-scale fisheries in developing coastal communities. In inflationary contexts, unstable income further limits the ability to invest in data plans or paid online advertising. As a result, online selling becomes financially risky rather than beneficial. This situation demonstrates that digital tools are not equally accessible to all fishermen. Consequently, technological inequality reinforces existing livelihood vulnerabilities.

Beyond infrastructure, social pressure also shaped fishermen's experiences with online selling. FP-1 (Dodong) emphasized that gossip and copied posts within the community created stress and discouragement. This finding aligns with Fabinyi et al. (2022), who observed that social relations in small fishing communities can influence livelihood decisions as strongly as economic factors. Competition among sellers often intensified tensions rather than cooperation. In online spaces, copied posts and price comparisons heightened fear of income loss. These pressures undermined trust and motivation to sustain digital selling efforts. Thus, social environments intersected with technological barriers. Together, they reduced the perceived viability of online market participation. Some studies present contrasting findings, showing that online platforms can empower small-scale producers when strong community support exists. Nguyen et al. (2021) found that collective online marketing improved income stability among organized fishing groups. However, such outcomes depended on digital literacy training and cooperative norms. In the present study, the absence of structured support limited similar benefits. The lack of institutional mediation allowed competition to escalate unchecked. This contrast suggests that technology alone does not guarantee improved market outcomes. Instead, enabling social and organizational conditions are required. Without them, online platforms may increase stress rather than opportunity.

Indeed, this theme illustrates that digital access constraints are both material and social in nature. Limited connectivity, high costs, and unstable income combined with community pressure to discourage online engagement. These findings explain why online selling remained at a very low extent despite its potential advantages. The results reinforce arguments by Israel et al. (2020) that digital inclusion must address affordability, skills, and social dynamics simultaneously. Addressing only infrastructure gaps is insufficient. Effective interventions must also strengthen community norms that support cooperative rather than competitive online behavior. Otherwise, digital platforms will remain inaccessible to many small-scale fishermen.

Furthermore, the second theme, **Market Power Imbalance and Online Price Undervaluation**, reflects fishermen's limited control over pricing in online markets. FP-2 (Nel) reported that vloggers and buyers demanded discounts or publicly criticized prices, even when free delivery was offered. This finding is consistent with Pomeroy et al. (2020), who noted that small-scale producers often face weak bargaining power in unregulated digital markets. Online visibility did not translate into fair pricing. Instead, fishermen experienced pressure to lower prices to remain competitive. Such dynamics reduced expected income gains from online selling. Consequently, fish remained unsold despite marketing efforts. This outcome highlights structural inequalities within digital marketplaces.

Several studies help explain why online platforms may disadvantage small-scale fishermen. Santos et al. (2022) explained that digital markets often favor intermediaries and influencers who shape consumer perceptions. Vloggers' influence over pricing norms

can distort market value. Fishermen lacking brand recognition or follower networks are particularly vulnerable. In this study, Nel/FI-2's experience reflects this imbalance clearly. Online criticism discouraged buyers and devalued the catch. As inflation increased production costs, price undervaluation became more damaging. Thus, market power asymmetries amplified inflationary pressures. Some research presents alternative perspectives, suggesting that online platforms can reduce middleman dependence. Nguyen et al. (2021) found that direct online selling improved incomes in digitally organized fishing communities. However, those cases involved training, platform moderation, and cooperative selling. In contrast, the present study involved individual selling without institutional safeguards. This difference explains the inconsistency in outcomes. Without mechanisms to regulate pricing or protect sellers, online markets favored buyers. Therefore, market power imbalance persisted rather than diminished. The findings underscore the importance of governance in digital marketplaces.

Truly, this theme shows that online selling did not guarantee economic empowerment for fishermen. Instead, unequal power relations led to price suppression and unsold catch. These results support Béné et al. (2021), who argued that market access alone does not ensure resilience without fair trading conditions. Fishermen's inability to influence prices discouraged sustained online participation. Consequently, online platforms failed to function as effective market adaptation strategies. Addressing power imbalances is essential for meaningful digital inclusion. Without regulation or collective action, online markets may replicate traditional inequalities.

Lastly, the theme, **Technological Exclusion and Price Volatility**, highlights how lack of basic digital tools and unstable pricing undermined online market participation. FP-3 (Arb) reported that the absence of a cellphone initially prevented online selling. This finding reflects technological exclusion, which remains prevalent in small-scale fisheries. Cabral et al. (2021) observed that ownership of digital devices strongly predicts participation in digital markets. In low-income contexts, purchasing smartphones competes with basic household needs. Inflation further restricts such investments. As a result, fishermen remain excluded from online opportunities. This exclusion delays adaptation and deepens vulnerability.

Even after gaining access to technology, FP-3 (Arb) experienced price volatility influenced by vloggers and online trends. Prices fluctuated frequently, creating income uncertainty. Teh et al. (2020) explained that digital exposure can increase price volatility by accelerating information flows without stabilizing mechanisms. For fishermen, rapid price changes complicate planning and financial management. This instability discourages reliance on online platforms. Moreover, volatility undermines trust in digital markets. As a result, fishermen prefer traditional selling channels. These findings align with the continued preference for fish port transactions noted by FP-3 (Arb).

Contrary evidence exists in contexts where digital platforms are integrated with stable market systems. Santos et al. (2022) reported that price transparency reduced volatility when digital tools were supported by cooperative marketing. However, such structures were absent in the present study. Online selling occurred individually and informally. Without collective price setting, volatility persisted. This difference explains why online platforms failed to stabilize income. It highlights the importance of institutional frameworks. Technology alone cannot ensure price stability.

Certainly, this theme demonstrates that technological access is a prerequisite but not a guarantee of successful online selling. Device ownership must be accompanied by stable market conditions. Without regulation, online exposure increases uncertainty rather than resilience. These findings reinforce Israel et al. (2020), who emphasized the need for inclusive digital systems that protect vulnerable producers. Price volatility and exclusion discouraged long-term online engagement. Consequently, fishermen continued to rely on traditional markets. Addressing both technological and market instability is critical for effective adaptation.

Structural and Digital Barriers to Effective Online Market Participation. The three emerging themes converge into this theme cluster that captures how technological limitations, power imbalances, and market instability collectively constrained online selling. Digital access issues limited entry into online markets. Market power imbalances undermined fair pricing once entry occurred. Price volatility further discouraged sustained participation. These barriers interacted rather than operating independently. Together, they weakened the potential of online platforms as adaptive strategies. This explains the very low quantitative ratings for online selling and community-based marketing.

The cluster aligns with broader literature on small-scale fisheries and digitalization. Béné et al. (2021) argued that resilience depends on systemic support rather than individual adaptation alone. Similarly, Fabinyi et al. (2022) emphasized that structural inequalities shape livelihood outcomes. The present study confirms these arguments within the local context of Barangay Kabatiol. Fishermen's experiences illustrate how digital solutions can fail when structural barriers persist. Online platforms did not eliminate middlemen dynamics. Instead, new forms of exclusion emerged.

Contrasting studies highlight the role of institutional support in overcoming such barriers. Pomeroy et al. (2020) showed that organized cooperatives improved digital market outcomes. However, such mechanisms were absent in the study area. This absence explains why online selling remained marginal. Structural barriers outweighed individual effort. Thus, market adaptation requires collective and institutional interventions. Individual strategies alone are insufficient.

In sum, the theme cluster emphasizes that online market participation is shaped by broader systems. Digital tools must be embedded within supportive economic and social structures. Without these, online platforms may intensify inequality. The findings underscore the limits of technology-driven solutions. Structural reform is essential for inclusive adaptation. This cluster provides a coherent explanation for the study's qualitative and quantitative results.

Implications for Small-Scale Fishing Communities

The findings have important implications for small-scale fishing communities. First, digital inclusion programs may go beyond connectivity and address affordability, device access, and digital literacy. Second, community-based marketing initiatives may be strengthened to reduce unhealthy competition and promote collective selling. Third, mechanisms to protect fishermen from online price manipulation are necessary. Fourth, cooperatives may help stabilize prices and bargaining power. These interventions may transform online platforms into viable adaptation tools. Without them, digital markets may remain exclusionary.

Moreover, market development initiatives may integrate technology with institutional support. Local government units and development agencies may facilitate training, infrastructure, and cooperative organization. Policies may recognize that inflation

magnifies digital and market inequalities. By addressing structural and digital barriers together, fishing communities may better adapt to economic pressures. Ultimately, strengthening market systems may enhance livelihood sustainability.

IV. SUMMARY & INSIGHTS, IMPLICATIONS, CONCLUSIONS & CONCLUDING REMARKS, AND RECOMMENDATIONS

This section presents the summary of findings, key insights, conclusions, implications, and recommendations of the study, drawing directly from the results and discussions. It revisits the central research problem and briefly reiterates the mixed-method procedures undertaken to examine how inflation affected small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province, and the strategies they employed to mitigate its impacts.

The section synthesizes the major quantitative findings on the extent of fishing strategies, specifically cost management, financial management, market adaptation, technological integration, and collaborative approaches, alongside qualitative insights on the challenges and barriers that hindered fishermen's participation in online platforms and community-based marketing strategies.

The integration of quantitative patterns and qualitative narratives provides a comprehensive understanding of fishermen's adaptive responses to inflation, highlighting how income level, access to resources, digital constraints, and community dynamics shaped strategic decision-making. This synthesis clarifies the interaction between economic pressures and livelihood strategies, revealing both strengths in traditional coping mechanisms and limitations in market and technological adaptation. Through this integrated analysis, the chapter underscores the value of a mixed-method approach in capturing both measurable variations in strategy use and the lived experiences behind those patterns.

Based on these synthesized findings, conclusions are drawn in direct response to the research questions and the Sustainable Livelihoods Framework guiding the study. The chapter further discusses the practical implications of the results for small-scale fishing communities, local government units, and fisheries support institutions, particularly in strengthening livelihood resilience amid inflation. Finally, recommendations are presented to guide National Policymakers and Regulatory Agencies (Bureau of Fisheries and Aquatic Resources [BFAR]), Local Government Units (Province of Sarangani and Municipality of Maasim), Small-Scale Commercial Fishermen, Fishing Communities and Households, Academic Community and Future Researchers, ABM Students and Educators in enhancing economic support mechanisms, improving market access, and advancing research on adaptive strategies in small-scale fisheries under economic stress.

Summary of Findings

This study was conducted to examine the effects of inflation on small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province, with particular emphasis on the fishing strategies they employed to mitigate rising fuel prices, increased fishing input costs, and reduced purchasing power. To address this research objective, the study employed a mixed-method research design, integrating quantitative and qualitative approaches to obtain a comprehensive understanding of fishermen's adaptive responses to inflation. The quantitative component utilized a descriptive-survey method involving thirty (30) small-scale commercial fishermen who met the inclusion criteria and were selected through purposive sampling.

Quantitative data were analyzed using frequency counts, percentages, weighted means, and Analysis of Variance (ANOVA) to determine the extent of strategy use and to examine differences in strategy adoption according to income level. To complement the survey results, Key Informant Interviews (KIIs) were conducted with selected fishermen, and the qualitative data were analyzed using thematic analysis to capture fishermen's lived experiences, particularly the challenges and barriers that prevented them from using online platforms and participating in community-based marketing strategies. The integration of quantitative patterns and qualitative insights provided a nuanced and context-sensitive understanding of how small-scale fishermen navigated economic pressures brought about by inflation.

Based on the results and interpretation of the data, the findings of the study were the following:

1. Demographic and Economic Profile of the Respondents
    - 1.1 Most respondents were 47 years old and above, indicating an aging fishing workforce.
    - 1.2 The majority were married, reflecting strong family responsibilities that influence livelihood decisions.
    - 1.3 A large proportion had high school-level education, with only a few reaching college level.
    - 1.4 Most fishermen had 13 years and above of fishing experience, suggesting extensive experiential knowledge.
    - 1.5 The majority earned ₱1,000–₱3,999 per fishing trip, indicating generally low- and unstable-income levels.
2. Extent of Fishing Strategies Employed
    - 2.1 Cost Management
        - 2.1.1 Fishermen employed cost management strategies to a high extent ($\bar{x}$ = 4.05).
        - 2.1.2 The most practiced strategy was strategic scheduling of fishing trips to maximize fuel efficiency.
        - 2.1.3 Monitoring and controlling daily fishing expenses were also practiced to a high extent.
        - 2.1.4 Sharing of resources such as tools, boats, or labor was practiced but to a relatively lower extent than other cost strategies.
    - 2.2 Financial Management
        - 2.2.1 Financial management strategies were employed to a high extent ($\bar{x}$ = 3.85).
        - 2.2.2 Diversifying catch and fishing areas to stabilize income was practiced to a very high extent.
        - 2.2.3 Saving and contingency planning during peak seasons were also highly practiced.
        - 2.2.4 Cooperative marketing and direct selling were practiced to a moderate extent, indicating financial and structural constraints.
    - 2.3 Technological Integration
        - 2.3.1 Technological integration strategies were employed to a high extent ($\bar{x}$ = 3.53).
        - 2.3.2 The most practiced technological strategy was adjusting fishing routes based on real-time weather updates.

2.3.3 Fuel-saving techniques learned from technological tools were also practiced to a high extent.
2.3.4 The use of advanced tools such as GPS and fish finders was practiced only to a moderate extent.
2.4 Market Adaptation
2.4.1 Market adaptation strategies were employed to a moderate extent ($\bar{x}$ = 2.80).
2.4.2 Diversifying catch based on high-demand species was practiced to a high extent.
2.4.3 Selling directly to consumers through barangay markets and online platforms was practiced to a low to very low extent.
2.4.4 Participation in marketing trainings and community-based marketing initiatives was also limited.
2.5 Collaborative Approaches
2.5.1 Collaborative strategies were employed to a high extent ($\bar{x}$ = 3.63).
2.5.2 Encouraging fellow fishermen to adopt sustainable fishing practices was practiced to a very high extent.
2.5.3 Participation in discussions and decision-making on sustainable practices was also high.
2.5.4 Active involvement in formal Community-Based Resource Management (CBRM) programs was practiced to a moderate extent.
3. Difference in the Extent of Fishing Strategies Employed by Commercial Small-Scale Fishermen When Grouped According to Income Level
3.1 There was a statistically significant difference in the extent of fishing strategies employed according to income level (F = 4.17, p = 0.01).
3.2 Fishermen with higher income per fishing trip employed fishing strategies to a greater extent than those with lower income.
3.3 Income level significantly influenced fishermen's ability to adopt cost management, financial management, technological, and market-related strategies.

Insights

The qualitative findings revealed that digital platforms, while perceived as potentially beneficial, did not function as inclusive or reliable market solutions for small-scale fishermen under inflationary conditions. Although online selling was expected to reduce dependence on middlemen and improve prices, fishermen's experiences showed that unequal power relations, unstable pricing mechanisms, and lack of regulatory protection often negated these benefits. This suggests that digitalization alone is insufficient to improve fishermen's livelihoods without parallel institutional and market safeguards.

Another important insight is that digital exclusion among fishermen is multidimensional, extending beyond the absence of internet connectivity or devices. Social pressures, such as community gossip, copied posts, and intense competition among sellers, created psychological stress that discouraged sustained online participation. These social dynamics indicate that livelihood adaptation is shaped not only by economic capacity but also by community relationships and norms, which can either support or undermine innovation.

The qualitative narratives further highlighted that online markets introduced new forms of vulnerability rather than stability. Fishermen experienced price manipulation and volatility driven by vloggers and online influencers, resulting in income uncertainty and unsold catch. This reveals that informal digital markets may reproduce or even intensify traditional inequalities, shifting market control from physical middlemen to digital actors without improving fishermen's bargaining position.

An additional insight is that technological access did not guarantee effective market participation. Even when fishermen acquired mobile phones or attempted online selling, buyer preference for traditional fish port transactions persisted. This indicates that market behavior and consumer trust remain deeply rooted in conventional trading practices, limiting the transformative potential of online platforms in small coastal communities.

Generally, the qualitative results suggest that market adaptation strategies require systemic support rather than individual effort alone. Fishermen demonstrated willingness to explore online and community-based marketing, but structural barriers, such as weak digital infrastructure, lack of organized marketing systems, and absence of protective policies, restricted their ability to benefit from these strategies. These insights emphasize that strengthening fishermen's resilience to inflation demands integrated interventions that address technological access, market governance, and community-level support simultaneously.

Implications of Qualitative Findings

1. Theory and Knowledge Building

The qualitative results contribute to theory by reinforcing the view that livelihood adaptation is a structurally mediated process, not merely an individual choice. While existing livelihood and resilience frameworks emphasize access to assets and strategies, the findings extend these models by highlighting how digital markets may reproduce power imbalances and new forms of vulnerability. The emergence of barriers related to online influencers, price volatility, and social pressure suggests that digitalization must be theorized not only as a technological asset but also as a contested social and economic space. This study therefore enriches livelihood theory by integrating digital inequality and informal market governance as critical analytical dimensions. It supports the argument that adaptive capacity is shaped by the interaction of technology, social relations, and institutional support rather than by technology adoption alone.

2. Educational and Professional Practice

From an educational and professional standpoint, the findings imply that capacity-building programs for fishermen must go beyond basic digital literacy. Training initiatives should incorporate modules on online market ethics, pricing strategies, consumer negotiation, and risk management in digital spaces. Professionals working in fisheries development, extension services, and community education need to be equipped to address the psychosocial stress associated with online competition and income instability. Furthermore, experiential and peer-based learning approaches may be more effective than purely technical instruction,

given fishermen's reliance on shared experiences. The study underscores the need for practitioners to contextualize education within fishermen's lived realities rather than promoting technology as a universal solution.

3. Program and Policy Implications

The qualitative results have strong implications for fisheries and livelihood policies. They indicate that policies promoting digital marketing as a livelihood solution may be accompanied by protective mechanisms, such as price stabilization measures, market regulation, and support for collective selling. Government and development programs may prioritize inclusive digital infrastructure, affordable connectivity, and access to devices for low-income fishermen. Moreover, strengthening cooperatives and community-based marketing systems may help counteract unequal power relations in online markets. Without such structural support, policies encouraging online selling may inadvertently increase economic risk for already vulnerable fishing households.

4. Creativity and Innovation

The findings suggest that innovation in small-scale fisheries should not focus solely on introducing new technologies, but on reimagining market systems in ways that are fair, inclusive, and community-centered. Creative solutions may include hybrid marketing models that combine traditional fish ports with moderated digital platforms, or community-managed online marketplaces that protect sellers from price manipulation. Innovation may also take the form of locally adapted practices, such as shared digital accounts managed by cooperatives or barangay-based delivery systems. These approaches recognize fishermen as co-creators of innovation rather than passive recipients of technology. Thus, creativity in this context involves institutional and social innovation as much as technological advancement.

5. Socio-Cultural Implications

The qualitative results highlight that market adaptation strategies are deeply embedded in social relationships and cultural norms. Community gossip, competition, and peer comparison significantly influenced fishermen's willingness to engage in online selling. This implies that socio-cultural cohesion can either facilitate or hinder economic adaptation. Interventions must therefore be sensitive to local values, trust relations, and existing community dynamics. Strengthening cooperation and mutual support within fishing communities is essential to prevent digital platforms from intensifying social divisions. The study underscores that sustainable livelihood strategies must align with, rather than disrupt, the social fabric of small-scale fishing communities.

6. Ethico-Moral Implications

Ethically, the findings raise concerns about fairness, dignity, and protection of vulnerable livelihoods in emerging digital markets. The experiences of price manipulation, public criticism by influencers, and income loss point to moral issues related to exploitation and unequal bargaining power. These conditions call for ethical reflection on how digital platforms are used and regulated in small-scale economies. Development actors and policymakers have a moral responsibility to ensure that innovation does not come at the cost of fishermen's dignity and livelihood security. The study reinforces the principle that economic development initiatives may be guided by equity, social justice, and respect for human well-being, particularly for marginalized sectors such as small-scale fishermen.

Conclusions

Considering the findings of this study, it is concluded that:

1. The demographic and economic profile of the respondents indicates that small-scale fishing in the area is largely sustained by an aging and highly experienced workforce with substantial family responsibilities and generally low- and unstable-income levels. Despite having extensive fishing experience, most fishermen possessed only basic educational attainment, which may limit their access to alternative livelihoods, advanced technologies, and formal market systems. The predominance of low income per fishing trip underscores the economic vulnerability of small-scale fishermen, particularly under inflationary conditions.

2. Small-scale commercial fishermen employed cost management, financial management, technological integration, and collaborative approaches to a high extent, indicating strong reliance on immediate, experience-based, and community-supported strategies to cope with inflation. In contrast, market adaptation strategies were practiced only to a moderate extent, with limited engagement in direct selling, online marketing, and formal marketing trainings due to structural and institutional constraints. Overall, the findings suggest that while fishermen demonstrated resilience through controllable and collective strategies, limitations in market access and institutional support restricted broader economic adaptation.

3. Income level significantly influenced the extent to which fishing strategies were employed. The statistically significant difference among income groups indicates that fishermen with higher income per fishing trip were better able to adopt and sustain cost management, financial, technological, and market-related strategies. This finding confirms that inflation magnified existing economic inequalities, as lower-income fishermen faced greater constraints in implementing adaptive strategies despite experiencing similar cost pressures.

Concluding Remarks

The journey of conducting this study was both challenging and enriching, as it required the researchers to move beyond surface-level observations and engage deeply with the lived realities of small-scale commercial fishermen in Barangay Kabatiol, Maasim, Sarangani Province. One of the major challenges encountered was gathering reliable data from respondents whose livelihoods were highly dependent on weather conditions, fishing schedules, and daily survival needs. Coordinating survey administration and interviews while respecting fishermen's time and responsibilities demanded flexibility, patience, and sensitivity. Despite these constraints, the researchers learned to adapt their data-gathering strategies, which strengthened their appreciation of context-sensitive research.

An unexpected discovery during the research process was the extent to which fishermen demonstrated resilience and practical wisdom despite limited income and resources. While the study initially assumed that technological and market-based strategies would be more prominent, the findings revealed that fishermen relied more heavily on cost management, financial

prudence, and collaboration grounded in experience and community ties. This insight challenged preconceived notions about adaptation and highlighted the value of indigenous knowledge and peer support systems. The qualitative phase, in particular, allowed the researchers to recognize how structural barriers, rather than lack of initiative, constrained fishermen's economic choices. Throughout the research process, the researchers experienced significant personal and academic growth. They developed stronger skills in critical analysis, data interpretation, and ethical engagement with participants, especially in handling narratives related to economic hardship. More importantly, the study fostered a deeper sense of empathy and social awareness, reinforcing the responsibility of researchers to give voice to marginalized sectors. Overall, this research journey underscored that meaningful inquiry is not only about producing findings but also about understanding people's struggles, learning from their resilience, and translating knowledge into insights that may contribute to positive change.

Recommendations

Based on the findings of the study, the researchers therefore recommend the following:

National Policymakers and Regulatory Agencies (Bureau of Fisheries and Aquatic Resources – BFAR). BFAR is encouraged to design income-sensitive and inflation-responsive fisheries programs that prioritize low-income small-scale fishermen who are most constrained in adopting adaptive strategies. Fuel subsidy schemes, input support, and microcredit programs may be expanded and simplified to reduce exclusion caused by strict registration requirements. BFAR may also institutionalize market protection mechanisms, such as price stabilization support and fair-trade guidelines, to reduce price manipulation by intermediaries and online influencers. Strengthening fisher cooperatives and providing shared access to fishing technologies may further reduce inequality in adaptive capacity. Lastly, digital livelihood initiatives may be paired with training, infrastructure, and safeguards to ensure equitable benefits.

Local Government Units (Province of Sarangani and Municipality of Maasim). LGUs may strengthen localized fisheries support systems by establishing community-based fish ports, cold storage facilities, and barangay-level trading centers to reduce transport costs and dependence on middlemen. The provincial and municipal governments may initiate digital literacy and market education programs tailored to fishermen's capacities and schedules. Support for cooperative development, including technical assistance and seed funding, may enhance collective bargaining and market access. LGUs may also integrate fisheries resilience strategies into local development plans to address inflation and livelihood vulnerability. Regular consultation with fishing communities is recommended to ensure programs remain responsive to local needs.

Small-Scale Commercial Fishermen. Small-scale commercial fishermen are encouraged to strengthen collective action by actively participating in cooperatives, fisherfolk associations, and savings groups to improve access to resources and markets. Continued practice of cost management, financial planning, and collaboration may be sustained and refined. Fishermen may also explore gradual and cooperative-based adoption of technology, such as shared digital tools or group-managed online selling platforms, to reduce individual risk. Participation in available training and government programs may enhance adaptive capacity. Building trust and cooperation among peers will be essential for long-term resilience.

Fishing Communities and Households. Fishing communities and households are encouraged to foster a supportive and cooperative social environment that reduces unhealthy competition and strengthens mutual assistance. Household members may be involved in value-adding activities such as processing, packaging, or assisting in marketing to diversify income sources. Community leaders may promote shared norms that encourage fair pricing and collaboration rather than rivalry. Strengthening family-based financial planning and savings practices may help buffer income shocks caused by inflation. Collective responsibility and solidarity are key to sustaining livelihoods under economic pressure.

Academic Community and Future Researchers. The academic community is encouraged to pursue longitudinal and comparative studies to examine how inflation and market dynamics continue to affect small-scale fisheries over time. Future researchers may explore the role of digital platforms, governance structures, and cooperative models in shaping livelihood resilience. Mixed-method and participatory approaches are recommended to capture both measurable outcomes and lived experiences. There is also a need to examine gender roles, youth participation, and intergenerational transitions in fishing communities. Such research may contribute to theory building and inform more inclusive fisheries policies.

ABM Students and Educators. ABM students and educators are encouraged to contextualize business and management concepts within real-world livelihood settings, such as small-scale fisheries. Curriculum integration of case studies on inflation, cost management, cooperative enterprise, and ethical marketing may deepen students' practical understanding. Educators may engage students in community-based learning projects that support local entrepreneurs and fishing households. This study may serve as a reference for developing socially responsive and inclusive business models. Ultimately, ABM education may promote innovation that balances profitability with social responsibility and equity.

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