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FISHERFOLK ENTREPRENEURIAL COMPETENCY FOR FOOD SUSTAINABILITY IN THE PHILIPPINES: A CASE OF CAMARINES SUR

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ABSTRACT

Strengthening the entrepreneurial competency of fisherfolk supports the United Nations Sustainable Development Goals, particularly those related to food sustainability and inclusive economic development. To advance advocacy for enhancing entrepreneurial capacity among fisherfolk, this study evaluated the level of personal entrepreneurial competencies among fisherfolk. It identified the competencies in which they excel and examined variations according to gender, business experience, educational attainment, and age. The study was conducted in San Jose and Sagnay, Camarines Sur, Philippines. A total of one hundred fisherfolk participated in this descriptive research and completed the Personal Entrepreneurial Competencies (PEC) Questionnaire to assess their entrepreneurial capacity. The findings indicate a moderate level of entrepreneurial competency. Risk-taking ranked highest, while goal setting recorded the lowest mean score. Self-confidence significantly declined with age, whereas gender and business experience showed no statistically significant influence on entrepreneurial competency. Educational attainment demonstrated a significant difference only in persistence. These findings support the development of a competency-based framework to strengthen fisherfolk enterprise capacity.

Keywords: Entrepreneurial competency, food sustainability, fisherfolk, fisherfolk entrepreneurial capacity.

INTRODUCTION

Entrepreneurial competency among fisherfolk strengthens food system sustainability and livelihood resilience in coastal communities. It enables fisherfolk to respond to changing environmental, economic, and market conditions through livelihood diversification, improved resource management, and informed decision-making. In resource-dependent communities, these competencies help stabilize household income, enhance access to market opportunities, and support local food availability. They also encourage fisherfolk to engage in value-adding activities and explore alternative income sources, thereby reducing dependence on fish capture alone. More importantly, entrepreneurial competency enhances adaptive capacity by enabling households to better respond to recurring shocks and uncertainties that affect coastal livelihoods. Strengthening these skills can therefore improve long-term livelihood viability while supporting more resilient and sustainable community-based food systems (Food and Agriculture Organization of the United Nations, 2020, 2021).

Small-scale fisheries operate within ecological and economic conditions that often destabilize household welfare and local food systems. In many coastal communities, fisherfolk face declining resource productivity, climate-related hazards, volatile market conditions, and limited access to finance and support services, all of which constrain their ability to maintain secure and predictable livelihoods. These pressures require fisherfolk to do more than sustain routine fishing activities. They must also adapt their livelihood strategies, improve value realization, and identify complementary income opportunities that reduce vulnerability to recurring shocks. In this context, entrepreneurial competency functions as a practical capability that strengthens decision-making, supports livelihood adaptation, and enhances household resilience. Its relevance, therefore, extends beyond enterprise formation, becoming closely linked to food security, income stability, and the long-term viability of small-scale fishing communities (Food and Agriculture Organization of the United Nations, 2015, 2021; Stacey et al., 2021).

In the coastal communities of San Jose and Sagnay, Camarines Sur, entrepreneurial competency is particularly important, as fisherfolk operate within unstable environmental and market conditions that directly affect their livelihoods. These communities rely heavily on small-scale fisheries as a primary source of income and food, increasing their exposure to declining fish stocks, price fluctuations, and limited livelihood alternatives. Under such conditions, entrepreneurial competency can help fisherfolk plan their livelihoods more strategically, optimize the use of available resources, and engage in supplementary or value-adding activities that enhance income opportunities. It also strengthens their capacity to respond to recurring livelihood risks while reducing dependence on fishing alone. For this reason, strengthening entrepreneurial capability should be viewed as an essential component of livelihood resilience and local food sustainability in these coastal communities (Food and Agriculture Organization of the United Nations, 2021; Bureau of Fisheries and Aquatic Resources, 2021).

Entrepreneurial competency also extends beyond individual livelihood adaptation, as it can strengthen fisherfolk participation in co-management initiatives and collective livelihood strategies. These competencies enable fisherfolk to engage more actively in local associations, cooperative enterprises, and community-based fisheries governance, where collaboration is essential to resource sustainability and economic resilience. Stronger participation in these groups creates opportunities for shared learning, improved market access, coordinated problem-solving, and more responsible resource stewardship among small-scale producers. It also builds the organizational capacity needed to address local challenges and

pursue collective economic opportunities. As emphasized by the Food and Agriculture Organization of the United Nations (2020), institutional support and collective action remain critical to improving the sustainability, resilience, and long-term viability of small-scale fisheries.

Although entrepreneurial competency has clear relevance to livelihood adaptation and sustainability in fishing communities, the factors that shape these competencies among fisherfolk remain underexamined in specific local contexts. Existing studies often discuss fisheries development, resource management, or livelihood diversification in broad terms, but pay less attention to how entrepreneurial behavior varies across demographic and socioeconomic conditions. This gap is significant because fisherfolk do not approach enterprise opportunities from the same starting point or with the same resources. Differences in age, educational attainment, and prior business exposure may influence how they plan livelihood activities, respond to risk, access information, and sustain enterprise-related effort over time. A more focused assessment of these competency dimensions is therefore necessary to identify areas requiring support and to guide the design of more responsive interventions for fisheries-dependent communities.

Despite the recognized value of entrepreneurship in livelihood development, empirical work on entrepreneurial competency among fisherfolk in the Philippine context remains limited, particularly at the level of specific behavioral dimensions. Existing studies and policy documents emphasize livelihood resilience, fisheries development, and institutional support, yet provide less focused evidence on how entrepreneurial capacity varies across age, gender, educational attainment, and prior business exposure among fisherfolk. This limitation constrains the design of targeted interventions, as support programs may fail to identify which competencies require the greatest reinforcement or which groups face the most significant barriers to enterprise readiness. A more focused assessment of personal entrepreneurial competencies is therefore necessary to clarify capability gaps and guide the design of locally grounded, evidence-based development strategies. By addressing these concerns, the present study contributes context-specific evidence that can inform competency-based interventions aimed at strengthening fisherfolk livelihoods and advancing food sustainability in coastal communities (Bureau of Fisheries and Aquatic Resources, 2021; Food and Agriculture Organization of the United Nations, 2021).

To address these concerns systematically, this study pursues four objectives. First, it assesses the level of personal entrepreneurial competencies (PECs) among fisherfolk in San Jose and Sagnay, Camarines Sur. Second, it determines whether significant differences exist based on gender, business experience, and educational attainment. Third, it examines the relationship between age and specific entrepreneurial competency traits. Finally, it proposes a competency-based framework to strengthen entrepreneurial capacity in support of food sustainability initiatives. Through these objectives, the study contributes to entrepreneurship scholarship while supporting competency-based capacity development among fisherfolk.

LITERATURE REVIEW

Food sustainability in the Philippines, particularly in coastal communities, remains a major concern due to the combined effects of overfishing, climate change, and limited livelihood alternatives. Small-scale fisherfolk continue to face declining catch volumes, unstable incomes, and heightened exposure to environmental and economic shocks. Achieving sustainable food systems requires more than maintaining food supply; it also demands ecological integrity, economic viability, and social inclusiveness to ensure

food security for present and future generations (Food and Agriculture Organization of the United Nations, 2024). In fisheries-dependent communities, this goal depends on the interaction between responsible marine resource management and resilient livelihood systems. The long-term stability of coastal food systems, therefore, rests on the ability of fisherfolk to adapt to environmental variability, market volatility, and institutional constraints. In this context, entrepreneurship serves as a strategic pathway for strengthening livelihood resilience and supporting food system sustainability in resource-dependent coastal economies (Golloso-Gubat et al., 2024; Watts et al., 2021).

Food sustainability in fisheries-dependent communities involves more than the continuous supply of fish. It also encompasses the capacity of households to maintain secure livelihoods, sustain productive ecosystems, and participate in local food economies over time. In coastal settings, food access is closely linked to the stability of fishing income, the condition of marine resources, and the ability of households to cope with seasonal scarcity, price fluctuations, and environmental shocks. When fishing families depend on a narrow and unstable income base, household-level vulnerability can quickly undermine food security at the community level. Food sustainability in small-scale fisheries should therefore be understood as both an ecological and a socioeconomic condition, shaped by resilient livelihood systems, adaptive decision-making, and supportive institutional environments. This perspective highlights the need to strengthen not only resource management but also the capacities that enable fishing households to remain economically and socially secure under changing conditions (Food and Agriculture Organization of the United Nations, 2015; Stacey et al., 2021).

Entrepreneurial competency refers to a set of attributes, skills, and behaviors that enable individuals to identify opportunities, mobilize resources, and manage risk effectively (Man et al., 2002). These competencies commonly include opportunity seeking, persistence, goal setting, information seeking, calculated risk-taking, and systematic planning. Such behavioral capacities become especially important in resource-constrained environments, where livelihood sustainability depends on adaptive and strategic decision-making under uncertainty (Nieuwoudt et al., 2017). Research in entrepreneurship and management shows that these competencies influence enterprise performance and long-term sustainability outcomes. For instance, Ahamat et al. (2026) found that leadership capability, entrepreneurial skills, and resilience significantly improve business success, while Lestari et al. (2024) showed that entrepreneurial passion and behavioral control help sustain entrepreneurial engagement. When applied within local socioeconomic conditions, these competencies can strengthen innovation capacity, stimulate enterprise development, and support more resilient community-based food systems.

Entrepreneurial competency should be understood as a developable behavioral capacity rather than a fixed personal trait or a simple outcome of livelihood exposure. Although fisherfolk may gain experience through fishing, trading, or other informal economic activities, experience alone does not necessarily lead to the strategic planning, opportunity recognition, persistence, and calculated risk management required for enterprise development. This distinction is analytically important because entrepreneurial competency captures how individuals translate knowledge, attitudes, and actions into practical responses under uncertain economic conditions. In resource-constrained settings such as small-scale fisheries, fisherfolk often operate within unstable markets, limited access to capital, and high environmental uncertainty. Under these conditions, entrepreneurial competency provides a more precise basis for understanding livelihood adaptation than broad references to skills or experience alone (Man et al., 2002).

Within the fisheries sector, entrepreneurial competencies contribute to food sustainability through several interrelated mechanisms. First, they support livelihood diversification by helping fisherfolk identify supplementary or value-adding activities that reduce exclusive dependence on capture fishing and stabilize household income. Second, they strengthen adaptive capacity by improving how fisherfolk interpret changing conditions, assess risk, and respond to environmental variability, market shifts, and livelihood disruptions. Third, they promote more deliberate and strategic use of available resources through planning, information seeking, and better alignment of production and marketing decisions. These functions become especially important in coastal communities where ecological decline and income instability can intensify food insecurity and weaken long-term livelihood continuity. Entrepreneurial competency, therefore, links individual agencies with broader livelihood resilience and sustainability outcomes in fisheries-dependent communities (Food and Agriculture Organization of the United Nations, 2015; Bureau of Fisheries and Aquatic Resources, 2021; Stacey et al., 2021).

Although entrepreneurship offers strong potential for livelihood diversification, its wider adoption among fisherfolk remains constrained by institutional and socio-cultural barriers. Factura et al. (2023) highlight persistent inefficiencies in government support systems, noting that many fisherfolk struggle to access training, credit, and basic infrastructure due to bureaucratic limitations and weak targeting mechanisms. Salehe et al. (2024) likewise observe that limited access to capital and low risk tolerance restrict the development of sustainable enterprises. In many fishing communities, gender norms further shape these constraints by limiting women's participation in decision-making and control over productive resources (Watts et al., 2021). These barriers reduce the capacity of marginalized groups to engage in enterprise development and benefit from livelihood opportunities. Addressing such structural constraints is therefore essential to strengthen inclusive entrepreneurship among fisherfolk and support more resilient coastal livelihoods.

The development and expression of entrepreneurial competency are shaped by local structural conditions rather than by individual initiative alone. Even when fisherfolk demonstrate persistence, initiative, or a willingness to diversify, limited access to credit, weak market linkages, inadequate extension services, and uneven institutional participation can prevent these capacities from translating into viable enterprise outcomes. As a result, entrepreneurial potential may remain underutilized – not because fisherfolk lack motivation, but because the enabling conditions for enterprise development are fragile or unevenly distributed. A competency-based perspective must therefore be considered alongside the broader support environment that influences whether entrepreneurial behavior can be sustained, expanded, and integrated into long-term livelihood development. In coastal communities, this broader context is essential for understanding how individual capability interacts with institutional support in shaping enterprise viability and livelihood resilience (Food and Agriculture Organization of the United Nations, 2015, 2021; Bureau of Fisheries and Aquatic Resources, 2021; Stacey et al., 2021).

Although entrepreneurial competency has been explored in agricultural contexts (Arellano & Delos Reyes, 2019), limited empirical evidence examines how specific competencies influence food sustainability outcomes among fisherfolk in the Philippines. Many studies aggregate entrepreneurial behavior without adequately accounting for contextual factors such as age, education, gender, or prior business experience. As Tolentino-Zondervan and Zondervan (2022) argue, achieving fisheries sustainability in the Philippines requires not only institutional reform but also the development of entrepreneurial capacities suited to local conditions. This gap is important because insights from agriculture cannot be applied directly to fisheries

without considering the ecological uncertainty, resource dependence, and market volatility that characterize fishing livelihoods. Fisherfolk often make economic decisions under conditions shaped simultaneously by weather variability, fluctuating catch, and limited institutional support, which may influence entrepreneurial behavior differently from that of land-based producers. A more focused assessment of personal entrepreneurial competencies is therefore necessary to determine how these dimensions vary across demographic and experiential factors and how they can inform more targeted livelihood interventions in fisheries- dependent communities (Bureau of Fisheries and Aquatic Resources, 2021; Food and Agriculture Organization of the United Nations, 2021).

This study is anchored in Entrepreneurial Competency Theory, which explains entrepreneurial effectiveness in terms of developable behavioral competencies rather than fixed personality traits (Man et al., 2002). The theory identifies competencies such as opportunity seeking, persistence, risk- taking, goal setting, and systematic planning as key drivers of strategic decision-making and enterprise performance. In resource-constrained settings, this perspective provides a useful analytical lens for examining how behavioral capacities shape adaptive capability and support livelihood sustainability. Applying this framework to small-scale fisheries allows the study to assess how differences in entrepreneurial competencies influence the ability of fisherfolk to respond to livelihood challenges and pursue enterprise opportunities. In doing so, the theory provides a clear basis for analyzing the relationship between individual entrepreneurial behavior, livelihood resilience, and food system sustainability in coastal communities.

This study addresses these gaps by assessing the personal entrepreneurial competencies (PECs) of fisherfolk in San Jose and Sagnay, Camarines Sur. It examines specific competency dimensions, including persistence, goal setting, and self-confidence, to determine how these vary across demographic groups. The study also considers how these competencies relate to sustainable fishing practices and income diversification within coastal livelihoods. In doing so, it aligns with national development priorities, including Republic Act No. 11321 or the Sagip Saka Act, which supports stronger market participation and expanded livelihood opportunities for local producers. The study further contributes to behavioral entrepreneurship research by extending competency-based analysis to a resource-dependent setting. In practical terms, it offers guidance for policymakers, nongovernment organizations, and community leaders seeking to integrate entrepreneurship into sustainable fisheries management and localized food security strategies.

METHODOLOGY

Materials and methods

This study employed a descriptive quantitative research design to examine the entrepreneurial competencies of fisherfolk in San Jose and Sagnay, Camarines Sur. A quantitative approach was appropriate, as the study sought to measure identifiable competency dimensions, summarize their distribution across respondents, and determine whether statistically significant differences existed across selected demographic variables. The descriptive design also aligned with the study's objectives, as it enabled the researcher to generate a systematic profile of personal entrepreneurial competencies and relate these patterns to age, gender, educational attainment, and business experience. In addition, this design

supported the development of a context-based intervention framework by grounding recommendations in observed empirical trends rather than anecdotal accounts alone. Its use was therefore consistent with the study's intent to describe, compare, and interpret measurable behavioral tendencies within a defined respondent group (Bhattacherjee, 2012; Rahi, 2017).

Entrepreneurial competencies were measured using the Personal Entrepreneurial Competency (PEC) Questionnaire, which assesses ten behavioral dimensions commonly associated with entrepreneurial performance. These dimensions include opportunity seeking and initiative, persistence, commitment to work contract, demand for efficiency and quality, risk taking, goal setting, information seeking, systematic planning and monitoring, persuasion and networking, and self-confidence. The instrument was appropriate for the present study because it captures observable and developable behavioral tendencies that can be compared across respondents, rather than relying solely on general self-descriptions of entrepreneurial interest. Its structured format also supported the quantitative profiling of competency patterns and enabled the researcher to identify which dimensions appeared stronger or weaker among fisherfolk respondents. As the PEC framework has been widely used in entrepreneurship development programs that emphasize behavior-based competency formation, it provided a suitable basis for assessing entrepreneurial readiness in a livelihood context marked by uncertainty, small-scale enterprise activity, and adaptive decision-making (Diaz et al., 1997; Man et al., 2002; United Nations Conference on Trade and Development, 2009).

The sample size was determined using Slovin's formula based on the total number of registered fisherfolk in the selected municipalities. The registered fisherfolk list served as an identifiable sampling frame, as it provided a practical basis for locating eligible participants within the study area. In selecting respondents, the researcher also considered field accessibility, particularly the availability of fisherfolk during non-fishing hours, since work schedules in coastal communities often affect the feasibility of face-to-face data collection. This approach reflects the practical logic of field-based nonprobability sampling, where accessibility and respondent relevance to the study objectives influence participant selection. By using an established sampling frame and a context-sensitive recruitment process, the study maintained a workable and consistent procedure for data collection in geographically and occupationally dynamic fishing communities (Bhattacherjee, 2012; Etikan et al., 2016).

Data Collection/Gathering Procedure

The researcher administered the questionnaire through direct field distribution to eligible respondents in the selected coastal communities. When necessary, the researcher clarified specific items to ensure consistent interpretation of the statements, particularly when respondents required assistance in understanding the wording of the instrument. Unstructured interviews were also used in a limited supportive capacity to clarify contextual responses and enrich the researcher's understanding of the livelihood conditions surrounding the respondents. Before data collection, the researcher explained the purpose of the study, the voluntary nature of participation, and the right of respondents to decline or withdraw without penalty. Verbal informed consent was obtained prior to participation, and respondent confidentiality was safeguarded by treating all responses as private and presenting findings in aggregated form. These procedures aligned with established research ethics principles emphasizing informed consent, respect for people, and the protection of participant privacy and confidentiality in human-subject research (Bhattacherjee, 2012; The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979).

Data Analysis

Responses were encoded and organized using Microsoft Excel and were subsequently analyzed in jamovi using appropriate descriptive and inferential statistical procedures. Mean scores were used to describe the overall level of entrepreneurial competency across the ten PEC dimensions. Pearson product-moment correlation was employed to determine whether age was linearly associated with competency scores, while the independent-samples t-test was used to examine differences between two-group variables, specifically gender and business experience. One-way analysis of variance (ANOVA) was applied to test differences across categories of educational attainment, as this variable involved more than two groups. The study interpreted statistical significance at the 0.05 level, which served as the basis for determining whether observed relationships or differences were unlikely to have occurred by chance. These procedures were appropriate because the study sought to test associations and compare group means within a structured quantitative dataset (Bhattacherjee, 2012; Mishra et al., 2019; The jamovi project, 2023).

RESULTS AND DISCUSSIONS

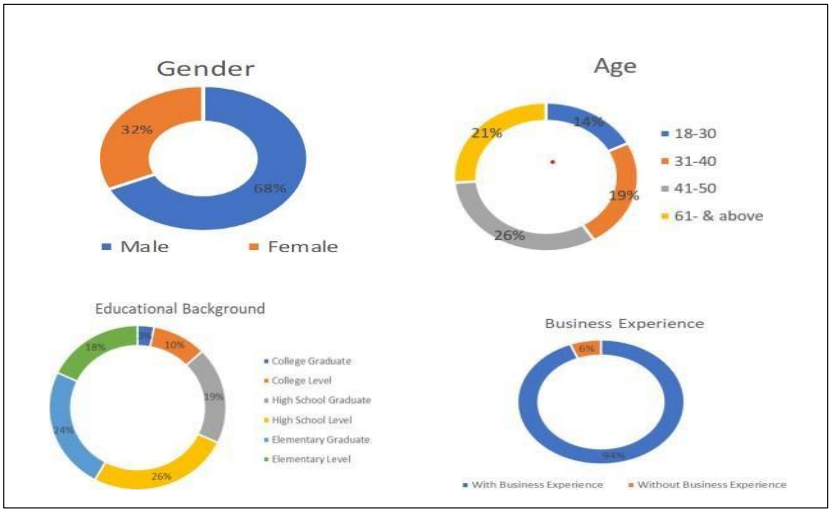
Respondent Demographic Profile

Figure 1 presents the demographic profile of the respondents. Among the fisherfolk surveyed, 68% were male and 32% were female, reflecting the continued predominance of men in capture fisheries. Historical and cultural factors have long influenced the lower participation of women in direct fishing activities, although their growing involvement in livelihood-related decision-making remains important for inclusive community development. Most respondents were 41 years old or older, indicating an aging fishing population and the declining participation of younger individuals in fisheries-based livelihoods. In terms of educational attainment, most respondents had either completed or reached high school level. The majority also reported prior involvement in fish trading, suggesting that many entered market-related livelihood activities through practical exposure rather than formal enterprise preparation (Heinart & Roberts, 2016).

The demographic profile provides important context for interpreting the entrepreneurial competency patterns observed in the study. The predominance of older respondents, the concentration of educational attainment at the high school level or below, and the reported experience in fish trading suggest that enterprise development among fisherfolk occurs under conditions shaped by limited formal preparation and routine livelihood exposure. These characteristics matter because they influence how respondents approach planning, market participation, and enterprise-related decision-making. They also underscore the need for competency-based interventions that strengthen market-oriented behavior, enhance adaptive capacity, and support the long-term sustainability of fisheries-related livelihoods (Arulingam et al., 2019; Food and Agriculture Organization of the United Nations, 2015).

Figure 1

Profile of Fisherfolk Respondents



Fisherfolk Entrepreneurial Competency

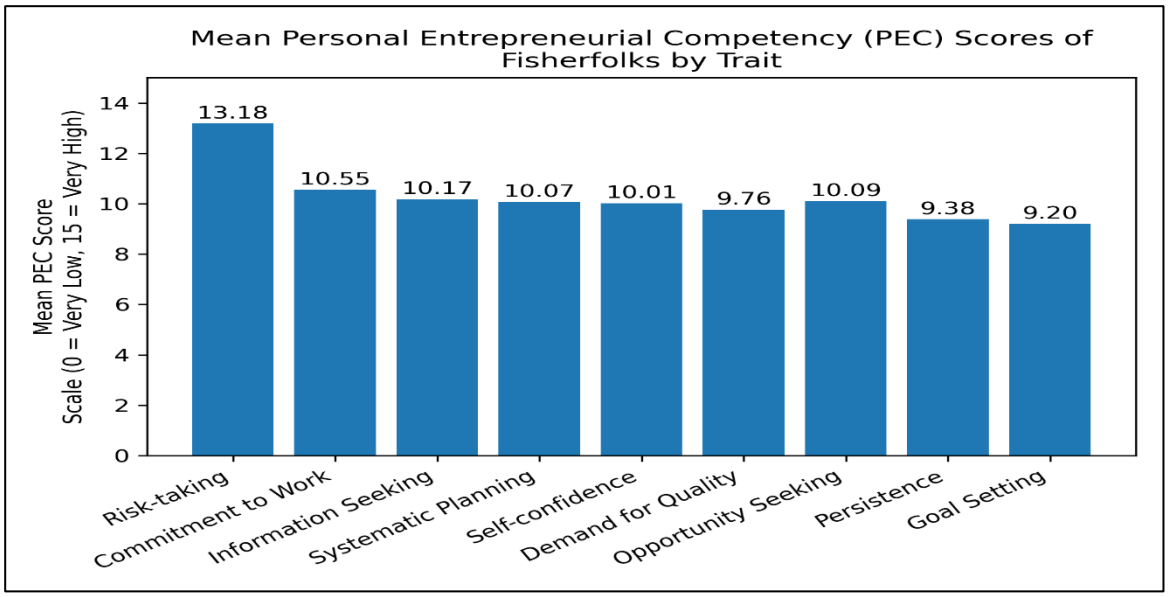
Figure 2 presents the mean scores across the ten Personal Entrepreneurial Competency (PEC) indicators measured using the PEC Questionnaire adapted from Diaz et al. (1997). The scores are standardized on a 15-point scale, where 0 indicates very low competency, and 15 indicates very high competency. As shown in Figure 2, risk-taking obtained the highest mean score (M = 13.18), indicating a strong tolerance for calculated risk in livelihood activities. In small-scale fisheries, resource uncertainty and market variability may reinforce adaptive risk behavior. By contrast, goal setting recorded the lowest mean score (M = 9.20), suggesting limited emphasis on measurable enterprise objectives. Similar findings among small-scale producers in the Philippines indicate that limited exposure to structured planning constrains long-term enterprise development (Arellano & Delos Reyes, 2019). The prominence of risk-taking in the present sample is consistent with the conditions of small-scale fisheries, where daily decisions are shaped by uncertain catch levels, changing weather conditions, and fluctuating market prices. In this setting, risk-taking may reflect adaptation to unstable working conditions rather than a fully developed entrepreneurial orientation. The relatively low score for goal setting further suggests that this adaptive capacity is not yet supported by a clear enterprise direction. Without defined production, savings, or marketing targets, entrepreneurial activity may remain short-term and reactive. This pattern indicates that fisherfolk already possess some behavioral foundations for enterprise development but still require support to translate practical experience into structured planning and sustained business action (Arellano & Delos Reyes, 2019; Nieuwoudt et al., 2017).

Intermediate scores were observed in commitment to work (M = 10.55), information seeking (M= 10.17), and systematic planning (M = 10.07). These values suggest moderate entrepreneurial capacity, although the strategic integration of these traits remains limited. As Nieuwoudt et al. (2017) note, entrepreneurial attributes in rural economies often remain underutilized without targeted competency development interventions. The intermediate scores in these dimensions indicate emerging entrepreneurial capacity rather than fully developed enterprise competence. These findings suggest fisherfolk already demonstrate

discipline, initiative, and a degree of organization in managing livelihood activities. However, these competencies may still be shaped primarily by immediate household needs rather than long-term enterprise goals. Respondents may be willing to work consistently and seek relevant information, but they may not yet translate these behaviors into coordinated planning, reinvestment, or market expansion strategies. The results, therefore, point to the presence of entrepreneurial potential, alongside a continuing need for interventions that integrate these competencies into a more coherent enterprise orientation (Nieuwoudt et al., 2017; Man et al., 2002). Overall, the competency profile presented in Figure 2 reveals a behavioral imbalance: a strong risk orientation is not matched by equally strong planning and goal-setting capacities. This imbalance may constrain sustained enterprise growth despite active livelihood engagement.

Figure 2

Personal Entrepreneurial Competency Scores of Fisherfolk Based on 10 PEC Indicators



Mean PEC Score (Scale: 0 = Low, 15 = Very High Competency)

Source. PEC Questionnaire, adapted from Diaz et al. (1997)

Correlation of Age of Fisherfolk to Entrepreneurial Competency

Table 1 presents the Pearson correlation coefficients between age and the ten PEC indicators. As shown in Table 1, only self-confidence exhibited a statistically significant relationship with age ($r = –0.242$, $p = 0.015$). The negative coefficient indicates that entrepreneurial self-confidence declines as age increases. This finding contrasts with results reported by farmers, where confidence levels tended to increase with age (Paladan, 2021b), suggesting that livelihood context may shape how entrepreneurial confidence develops across sectors. In fisheries-dependent communities, the physical demands of fishing, continued exposure to environmental uncertainty, and limited engagement in formal enterprise activities may contribute to lower confidence among older respondents. Systematic planning ($r = –0.184$, $p = 0.067$) and commitment to work ($r = – 0.167$, $p = 0.096$) also showed weak negative trends, although these relationships did not reach statistical significance. Other competencies, including opportunity seeking, persistence, persuasion, and networking, demand for quality, and risk-taking, showed negligible

correlations, indicating relative behavioral stability across age groups. These findings differ from studies conducted in technology-oriented or urban settings, where age exerts a stronger influence on entrepreneurial orientation (Ibrahim & Mas'ud, 2016). In subsistence-based fishing communities, routine livelihood demands may outweigh formal enterprise development, thereby limiting age-related variation in most competencies.

This pattern highlights the need for age-sensitive entrepreneurial interventions, particularly those that incorporate mentoring and confidence-building mechanisms. The decline in self-confidence among older respondents may reflect the cumulative burden of working in a physically demanding and environmentally uncertain occupation. Long experience in fishing does not necessarily translate into confidence in entrepreneurial decision-making, especially when enterprise activity remains confined to traditional or low-margin transactions. Older fisherfolk may possess substantial practical knowledge of fishing operations while remaining less confident in innovation, financial planning, or market diversification, particularly when they have had limited exposure to entrepreneurship training or formal business support. This pattern suggests that age may influence confidence more strongly than other competencies, as self- confidence is closely linked to perceived adaptability under changing livelihood conditions. Programs that combine mentoring, peer support, and guided enterprise exercises may therefore be more effective than generic training alone in strengthening entrepreneurial confidence among older fisherfolk (Food and Agriculture Organization of the United Nations, 2015; Stacey et al., 2021).

Table 1

Fisherfolk's Entrepreneurial Competencies and Their Age with Correlation

Relationship of Age with	Correlation Coefficient	*P-value*
Goal Setting	0.003	*0.975*
Opportunity Seeking	-0.130	*0.196*
Information Seeking	-0.053	*0.599*
Persistence	0.009	*0.930*
Systematic Planning	-0.184	*0.067*
Commitment to Work	-0.167	*0.096*
Persuasion and Networking	-0.141	*0.161*
Demand for Quality	-0.070	*0.488*
Self-confidence	-0.242	*0.015*
Risk-taking	-0.058	*0.565*

Variations in the Entrepreneurial Competency of Fisherfolk Based on Educational Attainment, Gender, and Business Experience.

Difference in Entrepreneurship Competencies of Fisherfolk According to Gender

The independent samples t-test results presented in Table 2 indicate no statistically significant differences in Personal Entrepreneurial Competency scores between male and female fisherfolk across all ten indicators ($p > 0.05$). As shown in Table 2, both groups demonstrate generally comparable entrepreneurial profiles.

In the study area, livelihood activities largely center on direct fresh fish sales, with limited involvement in value-added processing or differentiated marketing strategies. Sales transactions also tend to occur based on catch availability rather than strategic pricing or demand analysis. These patterns suggest that entrepreneurial competencies related to market positioning and enterprise planning remain underdeveloped among both male and female respondents. The absence of significant gender differences, therefore, suggests that respondents operate under similar enterprise constraints within the local setting. Although men and women may perform different roles in fisheries-based livelihoods, both groups appear to face comparable limitations in market access, capital availability, and structured enterprise support. These shared constraints can produce similar competency patterns even when gendered divisions of labor remain present. The finding does not imply that gender is unimportant; rather, it suggests that weak enterprise conditions affect respondents across both groups. This result further indicates that future interventions should remain gender- sensitive while addressing the common structural barriers that constrain entrepreneurial development in fishing communities.

Table 2

Entrepreneurial Competencies of Fisherfolk according to Gender

Indicators	Mean Score		
	Male (68)	Female (32)	*P-value*
Goal Setting	9.35	8.81	*0.173*
Opportunity Seeking	9.93	10.44	*0.275*
Information Seeking	10.18	10.09	*0.837*
Persistence	9.34	9.44	*0.759*
Systematic Planning	9.97	10.28	*0.421*
Commitment to Work	10.47	10.78	*0.324*
Persuasion and Networking	9.97	9.53	*0.272*
Demand for Quality	9.71	9.91	*0.623*
Self-confidence	9.97	10.06	*0.806*
Risk taking	13.04	13.34	*0.613*

Disparities in Entrepreneurial Competencies of Fisherfolk According to Business Experience

Table 3 presents the independent samples t-test results comparing respondents with prior business experience and those without such experience. As shown in Table 3, no statistically significant differences were observed across all ten competency indicators ($p > 0.05$). In the study area, business engagement appears to be concentrated in direct fish trading, with limited diversification into processing, branding, or market expansion. This narrow scope of enterprise activity may explain the absence of measurable differences in competency levels between the two groups. The finding suggests that prior business experience does not necessarily strengthen entrepreneurial competency when that experience is confined to routine and low-value transactions. Repeated involvement in fish trading may create familiarity with selling activities, but it may not develop broader competencies such as planning, innovation, opportunity recognition, or strategic market positioning. In this context, business experience_may reflect repetition rather than entrepreneurial progression. As a result,

respondents with prior trading exposure may not differ substantially from those without such experience in terms of measured entrepreneurial competencies. This result underscores the need for structured capability-building rather than if livelihood experience alone will produce stronger enterprise behavior.

Table 3

Entrepreneurial Competencies of Fisherfolk According to Business Experience

Indicators	Mean Score		
	Yes (94)	No (6)	*P-value*
Goal Setting	9.20	8.83	*0.736*
Opportunity Seeking	10.09	10.17	*0.903*
Information Seeking	10.17	9.83	*0.614*
Persistence	9.38	9.17	*0.560*
Systematic Planning	10.07	10.00	*0.921*
Commitment to Work	10.55	10.83	*0.695*
Persuasion and Networking	9.84	9.67	*0.724*
Demand for Quality	9.76	10.00	*0.700*
Self-confidence	10.01	9.83	*0.836*
Risk taking	13.18	12.50	*0.474*

Differences in Entrepreneurial Competencies of Fisherfolks

According to Educational Attainment

The one-way ANOVA results shown in Table 4 indicate a statistically significant difference in persistence across educational attainment levels ($p = 0.025$). As presented in Table 4, respondents at the high school level recorded the highest mean score for persistence (10.22), followed by high school graduates (9.67) and college-level respondents (9.50). College graduates obtained the lowest mean score (7.33). No statistically significant differences were observed across the remaining competency indicators. These findings suggest that educational attainment is associated with persistence, but not with the other entrepreneurial traits measured in the study. Respondents with at least a high school education demonstrated stronger sustained effort than those with lower educational attainment. This pattern indicates that educational exposure may contribute more directly to task continuity and sustained effort than to other entrepreneurial dimensions. Schooling may reinforce habits related to discipline, continuity, and delayed goal attainment, all of which are relevant to persistence in livelihood and enterprise activities. At the same time, the absence of significant differences across the remaining competencies suggests that formal education alone does not automatically produce stronger entrepreneurial capacity in fishing communities. Many entrepreneurial behaviors may instead depend more heavily on livelihood context, resource constraints, and local market conditions than on schooling level alone. Overall, the findings indicate that educational attainment can support selected behavioral strengths, but enterprise development programs must still respond to the practical conditions that shape fisherfolk's decision-making.

Table 4

Entrepreneurial Competencies of Fisherfolk According to Educational Attainment

Indicators	Mean Score						*P-value*
	Elementary Level	Elementary Graduate	High School Level	High School Graduate	College Level	College Graduate	
Goal Setting	9.08	8.68	9.72	9.33	8.9	9.67	*0.660*
Opportunity Seeking	9.81	9.32	10.94	10.21	10.7	9.33	*0.174*
Information Seeking	10.11	9.9	11.17	9.88	9.5	10.33	*0.103*
Persistence	9.08	8.84	10.22	9.67	9.5	7.33	*0.025*
Systematic Planning	9.81	10.58	10	9.88	10.3	10.33	*0.806*
Commitment to Work	10.31	10.21	10.89	10.88	10.4	11.33	*0.506*
Persuasion and Networking	9.15	9.42	10.67	10.17	9.9	10.33	*0.178*
Demand for Quality	9.69	9.53	10	9.83	10	9.33	*0.957*
Self-confidence	10.23	9.58	10.33	9.96	9.5	10.67	*0.642*
Risk taking	12.73	13.47	13.78	12.75	13.9	11.33	*0.463*

This study proposes a structured entrepreneurial capacity-building program for fisherfolk based on the competency gaps identified through the empirical assessment conducted in San Jose and Sagnay, Camarines Sur. The program remains at the proposal stage and is designed as a pilot model that local government units (LGUs), non-governmental organizations (NGOs), and the Department of Agriculture may adopt or adapt. It aligns with Republic Act No. 11321, or the Sagip Saka Act, which promotes the development of farmer and fisherfolk enterprises as a strategy for strengthening rural livelihoods and local food systems (Republic Act No. 11321, 2019). The proposed framework is therefore grounded in the competency profile generated by the present study rather than in a generic entrepreneurship model. The findings show that fisherfolk demonstrate relative strengths in risk-taking and opportunity-seeking, but remain comparatively weaker in goal setting, persistence, and self-confidence. This pattern suggests that entrepreneurial support should begin with structured behavioral development before enterprise expansion or formalization is pursued. A competency-based approach is therefore appropriate because it responds directly to the behavioral gaps identified in the study while remaining sensitive to the realities of small-scale fisheries. From a policy perspective, this orientation is consistent with the Sagip Saka framework for enterprise development and with broader guidance linking support for small-scale fisheries to food security, value-chain participation, and community resilience (Food and Agriculture Organization of the United Nations, 2015; Republic Act No. 11321, 2019).

Entrepreneurship Capacity for the Fisherfolk

The program builds on the Community-Based Enterprise Development (C-BED) framework developed by Paladan (2021a), which integrates community participation, entrepreneurial competency development, and cooperative enterprise formation as pathways to inclusive economic sustainability. Within this framework, enterprise development is not treated simply as individual business formation but as a structured process that strengthens competencies, social organization, and market readiness within the community. The

intervention begins with a baseline assessment of personal entrepreneurial competencies (PECs) using validated instruments such as the PEC Questionnaire (Diaz et al., 1997). This diagnostic stage identifies specific behavioral gaps, particularly in goal setting and persistence, that require priority attention among fisherfolk in the study area.

Based on this assessment, the intervention is organized into two complementary phases. The first phase focuses on entrepreneurial mindset formation and foundational financial literacy. It emphasizes opportunity recognition, structured goal setting, recordkeeping, persistence, and self- confidence as behavioral foundations that should be strengthened before enterprise expansion can take place. This phase is intended to help fisherfolk move beyond subsistence-oriented decision- making toward more deliberate and future-oriented livelihood planning. The second phase focuses on enterprise planning, market linkages, and readiness for access to finance. It introduces participants to basic microenterprise planning, cost awareness, simple marketing strategies, and the practical requirements for engaging with cooperatives, microfinance institutions, rural banks, and other support mechanisms. Together, these two phases create a progression from behavioral preparation to enterprise operationalization, which is particularly important in fisheries-based communities where entrepreneurial potential may exist but has not yet been translated into structured enterprise practice (Food and Agriculture Organization of the United Nations, 2021; Nieuwoudt et al., 2017).

After the training phase, the framework supports the formation or strengthening of community- based enterprises, including cooperatives, fishing associations, and other collective livelihood structures. These organizational arrangements can improve bargaining power, consolidate market participation, and expand shared access to training, input, and post-harvest opportunities. In small-scale fisheries, collective enterprise mechanisms are especially important because individual fisherfolk often operate with limited capital, fragmented market access, and weak negotiating power. Leadership development, cooperative management, and participatory decision-making should therefore be integrated into the framework to help ensure that enterprise activities remain inclusive and organizationally sustainable. This community-based orientation is also consistent with approaches that emphasize reflexive education, participatory development, and collective learning in fishing communities (Food and Agriculture Organization of the United Nations, 2015; Watts et al., 2021).

To support long-term impact, the program also incorporates monitoring and sustainability mechanisms, including mentoring, technical assistance, and periodic review of enterprise -related outcomes. Monitoring should assess not only participation rates but also changes in selected competency dimensions, the preparation of simple enterprise plans, engagement with savings or financial services, and participation in collective livelihood structures. Technical follow-through remains necessary because fisherfolk may complete training without fully translating learned competencies into sustained enterprise behavior. Mentoring and periodic review can reinforce adaptive learning, identify implementation constraints, and refine the intervention for use in similar coastal communities. In this way, the feedback-oriented design strengthens the practical value of the framework by linking competency development with measurable livelihood processes and improving the scalability of local enterprise support initiatives (Food and Agriculture Organization of the United Nations, 2015, 2021).

THEORETICAL AND PRACTICAL IMPLICATIONS

Theoretical Implications

This study contributes to Entrepreneurial Competency Theory by applying a competency-based analytical framework within a fisheries-dependent and resource-constrained context. By disaggregating personal entrepreneurial competencies into specific behavioral traits, the findings demonstrate how individual attributes such as risk-taking, persistence, goal-setting, and self- confidence influence livelihood resilience and enterprise potential. Rather than treating entrepreneurship as a composite construct, the study identifies trait-level variations that shape adaptive capacity in coastal communities. The results extend behavioral entrepreneurship research by situating competency development within small-scale fisheries, where enterprise formation occurs under ecological uncertainty and limited institutional support. The observed imbalance between strong risk-taking and weaker planning-oriented competencies highlights the importance of structured behavioral development in sustaining microenterprise growth. This contextual application broadens the theoretical understanding of entrepreneurial competency in subsistence-oriented economies and reinforces the relevance of competency-based approaches in sustainability research.

The study also reinforces the analytical value of examining entrepreneurship at the level of specific competencies rather than treating it as a single undifferentiated construct. By showing that fisherfolk can exhibit relatively strong risk-taking while remaining weaker in goal setting, persistence, and self-confidence, the findings demonstrate that entrepreneurial behavior in resource-constrained settings is internally uneven. This differentiation is theoretically important because it clarifies how adaptive behavior may emerge without automatically producing structured enterprise readiness. In small-scale fisheries, where livelihood action is shaped by ecological uncertainty, market instability, and limited institutional support, Entrepreneurial Competency Theory becomes more informative when it accounts for these uneven behavioral configurations. The present study therefore contributes to the theory by showing that competency development in subsistence-oriented or semi-commercial settings is context-bound and closely tied to livelihood resilience rather than to enterprise growth alone (Man et al., 2002; Nieuwoudt et al., 2017).

Practical Implications

The findings provide empirical guidance for policymakers, local government units, and development agencies seeking to strengthen entrepreneurial capacity among fisherfolk. The combination of high risk-taking and comparatively weaker goal setting and persistence indicates the need for structured, competency-focused training interventions. Such programs should emphasize measurable objective setting, systematic planning, and confidence development to improve enterprise sustainability. In this context, the proposed two-phase intervention model aligns with Republic Act No. 11321, or the Sagip Saka Act, and supports cooperative formation, financial literacy, and micro-enterprise planning. Grounding program design in empirical competency assessment enables stakeholders to implement targeted and scalable initiatives that strengthen economic resilience while supporting sustainable fisheries management.

From an implementation perspective, entrepreneurial support for fisherfolk should be delivered through coordinated local mechanisms rather than isolated training activities. Local government units, extension personnel, cooperatives, and partner agencies can use the competency profile to prioritize modules on goal

setting, persistence, financial literacy, and enterprise planning while linking participants to post-training support. The findings further suggest that interventions should be differentiated where necessary, particularly for older fisherfolk who may require stronger confidence- building and guided mentoring. Practical support should also include access to collective marketing, basic financial services, and community-based enterprise organization, since competency gains are less likely to produce lasting outcomes when institutional support remains weak. Overall, the study provides a basis for designing targeted, scalable, and policy-aligned livelihood interventions that strengthen both enterprise capacity and localized food system resilience (Food and Agriculture Organization of the United Nations, 2021; Republic Act No. 11321, 2019; Watts et al., 2021).

CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

This study assessed the personal entrepreneurial competencies (PECs) of fisherfolk in San Jose and Sagnay, Camarines Sur, and identified specific behavioral strengths and gaps that can inform targeted entrepreneurial interventions. The findings indicate strong levels of risk-taking and opportunity-seeking, but comparatively weaker competencies in goal setting, persistence, and self-confidence. The statistically significant negative relationship between age and self- confidence further suggests that entrepreneurial confidence declines among older fisherfolk, while other competency traits remain relatively stable across age groups. Taken together, these results indicate that entrepreneurial competency among fisherfolk should be understood as a strategic livelihood capacity rather than a purely business-oriented trait. The observed pattern of stronger risk-taking and opportunity-seeking, combined with weaker goal-setting, persistence, and self-confidence, suggests that fisherfolk possess important behavioral foundations for enterprise development but still require structured support to translate these capacities into sustained and organized economic activity. This distinction is important because small-scale fisheries operate under conditions of ecological uncertainty, income instability, and limited institutional support. Strengthening entrepreneurial competency can therefore contribute not only to enterprise readiness but also to livelihood resilience, food system stability, and community- level sustainability. These findings support the view that fisherfolk enterprise development should be pursued as part of a broader small-scale fisheries strategy linked to food security, local value creation, and inclusive rural development (Food and Agriculture Organization of the United Nations, 2015; Republic Act No. 11321, 2019).

By disaggregating entrepreneurial behavior into measurable traits rather than treating entrepreneurship as a single composite construct, the study provides a more precise understanding of competency distribution within a fisheries-dependent and resource-constrained context. This trait-level analysis supports the development of competency-based interventions aligned with Republic Act No. 11321, or the Sagip Saka Act, which promotes enterprise development among rural producers. The proposed two-phase training framework builds on the empirical findings and integrates competency assessment, financial literacy, and cooperative enterprise formation to strengthen localized food system resilience (Paladan, 2021a). Despite these contributions, several limitations should be considered in interpreting the results. First, the analysis was limited to fisherfolk in San Jose and Sagnay, Camarines Sur; therefore, the findings reflect the conditions of these localities and should not be generalized uncritically to all fisheries- dependent communities in the Philippines. Second, the study relied on self-reported responses to measure entrepreneurial competencies, which may have been influenced by personal perception, response tendencies, or differences in the interpretation of questionnaire items. Third, although the descriptive

quantitative design was appropriate for profiling competencies and examining group differences, it does not establish causal relationships between entrepreneurial competency and livelihood outcomes. Finally, the study focused on selected demographic variables and did not incorporate broader structural factors such as market access, household assets, cooperative participation, or exposure to development programs, all of which may also shape entrepreneurial behavior among fisherfolk.

Future research should extend the present study through designs that capture both temporal change and broader contextual variation. Longitudinal studies may help determine whether entrepreneurial competencies shift over time in response to training, livelihood shocks, or participation in enterprise programs. Comparative studies across different coastal municipalities may also clarify how local ecological, institutional, and market conditions influence competency development. In addition, future research may focus on specific groups, such as women fisherfolk, youth in fishing households, or cooperative members, to identify differentiated patterns of entrepreneurial behavior. Mixed-method and qualitative studies may further deepen understanding of how fisherfolk interpret risk, planning, persistence, and opportunity within their everyday livelihood decisions. More importantly, future research should examine how specific personal entrepreneurial competencies relate to concrete outcomes such as income stability, enterprise continuity, market participation, and household food security so that competency-based interventions can be designed on stronger empirical grounds (Food and Agriculture Organization of the United Nations, 2015, 2021).

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REFERENCES

Ahamat, A., Aris, A., Mohd Yusof, S. W., & Wahid, M. S. (2026). Empowering women entrepreneurs in Malaysia: Key success factors and challenges. *International Journal of Management Studies, 33*(1), 1–19. https://doi.org/10.32890/ijms2026.33.1.1

Arellano, C. A., & Delos Reyes, J.A. (2019). Effects of farmer – entrepreneurial competencies on the level of production and technical efficiency of rice farms in Laguna, Philippines. *Journal of ISSAAS, 25*(2), 45-57. issaasphil.org/wp-content/uploads/2019/11/5.- Arellano_Delos-Reyes-2019-entrepreneurial_competencies-FINAL.pdf

Arulingam, I., Nigussie, L., Senaratna Sellamuttu, S., & Debevec, L. (2019). *Youth participation in small-scale fisheries, aquaculture and value chains in Africa and the Asia-Pacific*. WorldFish.

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices* (2nd ed.). University of South Florida.

Bureau of Fisheries and Aquatic Resources. (2021). *Comprehensive National Fisheries Industry Development Plan 2021–2025*. Department of Agriculture. https://www.bfar.da.gov.ph/wp-content/uploads/2022/10/Comprehensive-National-Fisheries-Industry-Development-Plan-CNFIDP-2021-2025.pdf

Diaz, P. H., Co, M. R., Macaspac, Z. S., & Vinuya, T. T. (1997). *Personal entrepreneurial*

development course (Vol. 1, Units 1–2). Office of Academic Support and Instructional Services.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5(*1), 1-4. https://doi.org/10.11648/j.ajtas.20160501.11

Factura, H., Cimene, F. T. A., & Nacaya, I. M. Q. (2023). Assessment of government assistance among small-scale fisherfolks. *International Journal of Business and Applied Sciences*, *21*(3), 36–42. http://dx.doi.org/10.12692/ijb/21.3.36-42

Food and Agriculture Organization of the United Nations. (2015). *Voluntary guidelines for securing sustainable small-scale fisheries in the context of food security and poverty eradication*. https://openknowledge.fao.org/server/api/core/bitstreams/edfffbfc-81e5- 4208- a36f-334ff81ac10f/content

Food and Agriculture Organization of the United Nations. (2020). The State of World Fisheries and Aquaculture 2020: Sustainability in action. FAO. https://doi.org/10.4060/ca9229en

Food and Agriculture Organization of the United Nations. (2021). *Financing small-scale fisheries in the Philippines: A policy brief*. Rome: FAO. https://doi.org/10.4060/cb8029en

Food and Agriculture Organization of the United Nations. (2024). The State of Food and *Agriculture 2024 – Value- driven transformation of agrifood systems*. Rome. https://www.fao.org/3/cc7744en/cc7744en.pdf

Golloso-Gubat, M. J., Felix, A. D. R., Tandang, N. A., Acuin, C. C. S., Gordoncillo, P. U., & Duante, C. A. (2024). Sustainability of the Philippine food system. *Frontiers in Sustainable Food Systems, 8*, Article 1278891. https://doi.org/10.3389/fsufs.2024.1278891

Heinert, S., & Roberts, T.G. (2016). Engaging rural youth in entrepreneurship through extracurricular and co-curricular systems. https://agrilinks.org/sites/default/files/resource/files/Heinert RobertsFINAL.pdf

Ibrahim, N., & Mas'ud, A. (2016). Moderating role of entrepreneurial orientation on the relationship between entrepreneurial skills, environmental factors and entrepreneurial intention: A PLS approach. *Management Science Letters, 6*(3), 225–236. https://doi.org/10.5267/j.msl.2016.1.005

Lestari, E. D., Aryawinata, D. N., & Windson, W. (2024). What motivates students to pursue entrepreneurial endeavours? The predicting roles of entrepreneurial passion and entrepreneurial education. *International Journal of Management Studies, 31*(2), 395–430. https://doi.org/10.32890/ijms2024.31.2.2

Man, T. W. Y., Lau, T., & Chan, K. F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing, 17*(2), 123–142. https://doi.org/10.1016/S0883-9026(00)00058-6

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Application of student's t-test, analysis of variance, and covariance. *Annals of Cardiac Anaesthesia, 22*(4), 407–411. https://doi.org/10.4103/aca.ACA_94_19

Nieuwoudt, S., Henning, J. I. F., & Jordaan, H. (2017). Entrepreneurial competencies and financial performance of farmers in South Africa. *South African Journal of Economic and Management Sciences, 20*(1), 1-13. https://doi.org/10.4102/sajems.v20i1.1640

Paladan, N. N. (2021a). Developing Farmers and Fisherfolks Entrepreneurial Capacity towards Community Based-Enterprise. *International Journal of Research and Innovation in Social Science*. https://www.researchgate.net/publication/357306649

Paladan, N. N. (2021b). Entrepreneurship capacity of farmers for community-based entrepreneurship.

The Asian Journal of Technology Management, *14*(3), 231-245. https://doi.org/10.12695/ajtm.2021.14.3.3

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences, 6*, 403. https://doi.org/10.4172/2162-6359.1000403

Republic Act No. 11321. (2019). *An Act Instituting the Farmers and Fisherfolk Enterprise Development Program of the Department of Agriculture*.

Stacey, N., Gibson, E., Loneragan, N. R., Warren, C., Wiryawan, B., Adhuri, D. S., Steenbergen, D. J., & Fitriana, R. (2021). Developing sustainable small-scale fisheries livelihoods in Indonesia: Trends, enabling and constraining factors, and future opportunities. *Marine Policy, 132*, 104654. https://doi.org/10.1016/j.marpol.2021.104654

Salehe, M. A., Sesabo, J. K., Isaga, N., & Mkuna, E. J. (2024). Factors influencing sustainable entrepreneurship in fisheries small and medium-sized enterprises. *Social Sciences & Humanities Open, 10*, 100909. https://doi.org/10.1016/j.ssaho.2024.100909

The jamovi project. (2023). *jamovi (Version 2.3.28) [Computer Software]*. https://www.jamovi.org

The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. (1979). *The Belmont Report: Ethical principles and guidelines for the protection of human subjects of research*.

Tolentino-Zondervan, F., & Zondervan, N. A. (2022). Sustainable fishery management trends in Philippine fisheries. *Ocean & Coastal Management, 223*, 106149. https://doi.org/10.1016/j.ocecoaman.2022.106149

United Nations Conference on Trade and Development. (2009). *Empretec programme: The entrepreneur's guide*.

Watts, P. D., Pajaro, M. G., Raquino, M. R., & Añabieza, J. M. (2021). Philippine fisherfolk: Sustainable community development action research and reflexive education. *Local Development & Society, 3*(2), 267–285. https://doi.org/10.1080/26883597.2021.1952847