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Strategic Competency and Growth of Aquaculture-Based Small Enterprises in Kenya

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ABSTRACT

Purpose: This study evaluated the role of strategic competency on growth of aquaculture based small enterprises in Kenya.

Methodology: The study adopted descriptive research design using mixed methods approach. The target population was 600 fish farmers in Nyeri County, Kenya. The study utilized purposive sampling to select fish farmers within Nyeri County, then cluster sampling to identify fish farmers in their various sub-counties. Simple random sampling was then utilized to select respondents for the study. A selfadministered questionnaire was used to collect data from the respondents. A pilot study was conducted to test validity and reliability of the questionnaire. Data analysis was done using Statistical package for Social Scientists (SPSS). Regression analysis and chi-square were used to test for significant associations between the dependent and independent variables. The findings were presented in frequency tables, pie charts, bar graphs and scatter diagrams in the final report.

Findings: The findings indicated a positive statistically significant relationship on strategic competency and its effect on growth. Further, regression analysis of the results established that strategic competency was found to account for 5.8% of the variation in the growth of aquaculture-based small enterprises in Kenya. 94.2% of variation in the growth of aquaculture based small enterprises in Kenya is explained by other factors outside the model.

Unique Contribution to Theory, Practice and Policy: Based on the study findings, the sector should sustain government and NGO support by subsidizing input costs, promoting cottage industries, and employing trained extension officers. In addition, the management should facilitate knowledge sharing through farmer excursions and disseminate information on region-specific fish farming techniques. Lastly, it should develop public-private partnerships to coordinate markets and reduce post-harvest losses through a demand-driven approach.

Key Words: *Strategic Competency, Growth, Aquaculture-Based, Small Enterprises*

Background of the Study

To be able to withstand the rapidly changing and turbulent environments in which they operate in, entrepreneurs have to continuously acquire and enhance their competencies (Ng & Kee, 2013). This is because the Owner Manager Entrepreneur (OME) determines the conditions, limits, firm characteristics and culture, and ultimately the value creating ability of an enterprise (Sánchez, 2012). The OME is often responsible for the tasks involved in running the enterprise hence is a crucial element to the growth or failure of a business venture (Gherhes, Williams, Vorley & Vasconcelos, 2016). According to Gupta et al. (2013) a flourishing enterprise is differentiated from a stunted one through various factors, key among them the characteristics of the entrepreneur and the kind of manpower involved in the day-to-day business activities. Therefore, entrepreneurs need to differentiate themselves on the basis of capabilities and competencies, thus create enterprises that compete in different dimensions which inculcate innovation, flexibility and high dynamism (Gupta, Gupta & Krishnaswami, 2013). Competencies are underlying characteristics of an individual that result in effective action and/or superior performance in a certain activity. Competencies are demonstrated in an individual's behavior in certain situations and circumstances. They are not the assignment of the job, but rather they enable individuals to do the assignment. (Mitchelmore & Rowley, 2013). Optimum performance occurs when an individual's capability or competency is consistent with the demands of the job at hand (roles and responsibilities), systems and structures in place and the firm environment (Saina & Ngugi, 2018).

Statement of the Problem

Research interest in strategic competency has arisen with the proven link between competencies and the birth, survival and growth of business ventures (Man et al., 2008; Ahmad et al., 2010; Saina & Ngugi, 2018). Small businesses globally are prone to stunted growth or failure due to the specific capabilities of the businesses and competencies of their owners and managers (Sánchez, 2012; Ongoro & Kihara, 2017; Saina & Ngugi, 2018). Empirical research has observed that an individual's ability to generate new ideas, manage resources and business operations, commitment to succeed, think strategically, and make informed decisions had the strongest positive connections to business growth (Mitchelmore & Rowley, 2010; Bird, 2019; Siswanto & Aisha, 2020). Although aquaculture has been perceived as a substitute to linking the yawning gap between fish demand and its supply in Kenya (Obiero et al., 2019), its declining growth has subsequently led to a decline in the growth of small enterprises within it (KMFRI, 2021) as experienced by a 4.6% decrease in job creation in the sector for the period 2015-2020 (FAO, 2022). Despite heavy government investment in aquaculture, Kenya lags behind as compared to other African countries, with aquaculture production growth declining in the 20142019 period from 24,096MT to 18,542MT respectively (KNBS, 2020).

Kenya's aquaculture business field is portrayed by a couple of large business ventures and a majority of micro-enterprises with an overwhelming missing middle (KMFRI, 2021). Therefore, majority of the aquaculture-based small enterprises do not experience business growth. Could this trend be as a result of poor strategic competency or lack thereof? Previous studies (Man, Lau & Snape, 2008; Mitchelmore & Rowley, 2010; Mitchelmore & Rowley, 2013; Gherhes, Williams, Vorley & Vasconcelos, 2016; Gustomo, Herliana, Dhewanto & Ghina, 2017) conducted in other

countries and sectors have established positive links between competencies and small enterprises' survival and growth. This study seeks to establish whether the declining small business growth in aquaculture is due to poor strategic competency or lack thereof. For example, in Hong Kong, China commitment and strategic competencies were found to be more closely linked to performance and growth of businesses in the service sector than other entrepreneurial characteristics such as intentions or motivations (Man, Lau & Snape, 2008). In Ethiopia, a study on furniture manufacturing SMEs established that besides environmental factors, an individual's ability to network and pursue viable business opportunities is paramount to the business' survival and growth (Cherkos, Zegeye, Tilahun & Avvari, 2017). There is a lot of evidence that propose the understanding of competencies in a small business that consequently lead to successful business growth (Bird, 1995; Mitchelmore & Rowley, 2013). In Kenya, most studies related to commitment competencies have mainly focused on the survival and growth of small enterprises in major sectors of the economy (Kiwara, Ngugi & Karanja, 2016; Ongoro & Kihara, 2017; Saina & Karanja, 2018; Kananu & Mutiso, 2018). Few studies, if any, have focused on strategic competency and growth of small enterprises in aquaculture. This study therefore seeks to fill this knowledge gap.

Hypotheses

H_{a1}: Strategic competency has significant effect on growth of aquaculture based small enterprises in Kenya **Literature Review**

Theoretical Review Resource Based View theory

A resource is anything that functions as a strength or a shortcoming to a particular firm (Arumugam et. al., 2017). The resource based view postulates that adequate administration of an organization's tangible and intangible resources to create value by entrepreneurs on the basis of experiential learning is a source of competitive advantage (Ekanem & Smallbone, 2007). According to Nteere (2012), the theory elaborates the way entrepreneurs build their ventures from the nature and quality of resources they currently possess or can realistically acquire in order to gain a sustained competitive advantage over others and achieve venture growth. Tangible resources are the physical assets possessed by a firm while intangible resources comprise routines and practices that have developed over time, tacit knowledge and specialist skills possessed by the entrepreneur and/ or employees that are valuable, unique and difficult to imitate and lead to sustainable competitive advantage of a firm. An organization's distinct capabilities are beneficial to its ability to manage risks and identify and take advantage of opportunities (Tehseen et al., 2019). Besides, the value creation process of a firm is essentially related to the capacity of entrepreneurs and supervisors to obtain and grow assets (Mitchelmore & Rowley, 2013). According to Nteere (2012) the resource based theory assumes six types of resources which include financial, physical, human, technological, reputational and organizational resources. In broad terms, these are assets, capabilities, organizational processes, firm attributes, information and knowledge that a firm possesses. This study focused on competency of an entrepreneur and their ability to acquire, coordinate, organize and manage resources and his/her ability to successful steer a business enterprise to optimum growth. In particular, the study evaluated strategic competency as essential internal resource that result in growth of aquaculture based small enterprises.

Theory of the Growth of a Firm

This theory was advanced by Edith Penrose in 1959. It expresses the significant role of resources, managerial and leadership styles and control measures and explains their influence on the development of a venture. The theory further deciphers the rate of development of a firm by identifying the heterogeneous relationship between a firm's success and its resources. A firm differentiates itself from the competition thus gaining competitive advantage by retaining valuable, rare and inimitable resources (Mwaniki, 2018). According to Penrose, a firm is an administrative organization in which structures and procedures evolve according to the level of human motivation and conscious human decisions. Together with unused and underutilized firm resources at the firm's reach, these offer the accelerators and the inhibitors of the growth of a firm. Further, a firm's ability to maintain adequate administrative coordination sets the limit to the rate at which a firm grows (Kor, Mahoney, Siemsen & Tan., 2016). Managerial experience, ability to formulate and effectively implement strategies provide avenues for opportunity identification and exploitation that result in creation, expansion and growth of a business enterprise.

The theory according to Penrose also offers a link to firm growth and profitability of a firm. Profits necessitate expansion/ growth hence managers and entrepreneurs intentionally make financial and investment decisions that permit the pursuit of profitable growth. With Penrose's focus on growth as an expected pursuit by firms and profitability as inevitable for firm survival and continued growth, the theory of the growth a firm provides a holistic understanding of the process of the growth of a firm and provides insights into how firms can create sustainable competitive advantage (Kor et al, 2016). This theory is paramount in this study because it recognizes that a firm is a summation of productive resources and that the services that emanate from these resources are key in promoting the firm's uniqueness. Further, managerial and strategic competency among the firm's decision makers shape the way the firm identifies and pursues opportunities for growth, therefore the effective management of resources to ensure firm growth.

Conceptual Framework

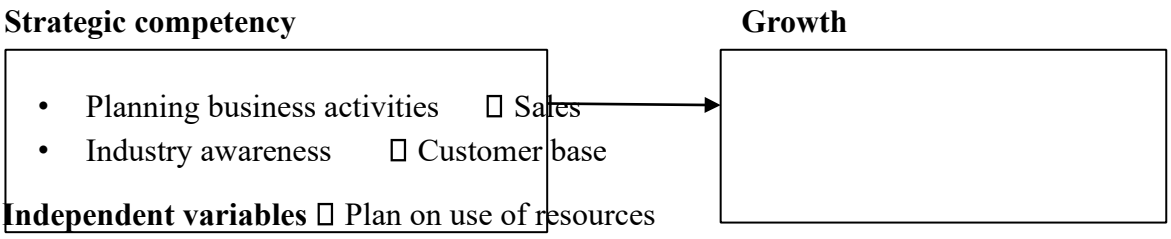

Figure 1: Conceptual Framework Strategic Competency and growth of aquaculture SMEs

Strategic competency refers to the ability of an entrepreneur to forecast into the future and develop the vision of the firm. It involves an entrepreneur's futuristic thought process and consequent daily actions that are geared towards achieving a set vision (Pepple & Enuoh, 2020); effectively plan for, assign and utilize scarce resources and visualize plans based on the current status quo of the firm and the growth intentions for the future (Tehseen et al., 2019). Strategic competency offers

businesses a competitive advantage over others and is a vital component for businesses that exist in unstable environments that are characterized by unpredictable consumer preferences (Tehseen et al., 2019). Strategic competency is reflected in an individual who aims at achieving set goals and objectives and effectively accomplishing tasks. Consequently, they are observed as knowledge, skills or behavior patterns that add up to the achievement of managerial tasks (Kyrgidou, Mylonas, Petridou and Vacharoglou, 2021). An individual's strategic competency is demonstrated in their self-awareness of their attitudes, assumptions and beliefs and how these impact ones perception of others. Similarly, an individual is able to effectively articulate themselves and communicate their vision to others in a manner that eliminates misunderstandings (Aslan & Pamucku, 2017). An entrepreneur's ability to formulate a team and work effectively as a member of that team builds leadership and cooperative effort within the team. Moreover, increased self-awareness considerably affects an entrepreneur's intuition, decision making ability and the degree of risk-taking and creativity, thus enabling the entrepreneur to effectively deliberate on opportunities and make elaborate customer-centered decisions.

Growth

Even though the most critical aim of an enterprise is survival, growth comes very closely too as it indicates whether a business is successful or not. Growth reduces the possibility of business failure and escalates the probability of survival (Tehseen, Ahmed, Qureshi, Uddin & Ramayah, 2019). According to Fatoki (2012), the main reason for stagnation and eventual failure of business enterprises is aversion to growth; both for the individual entrepreneur as well as the organization as a whole (Gupta, Gupta, & Krishnaswami, 2013). Growth of an enterprise is a consequence of increased demand for its products or services that lead to investment in factors of production in response to the growing demand. These give rise to increased sales of the products or services. Enterprise growth is an internal process and is achieved through appropriate utilization of a firm's internal competencies or capabilities. These internal resources enhance a firm's competitiveness and business growth (Tehseen et al., 2019). An enterprise's growth is measured in many ways. In management practices, business growth is measured by increase in employee numbers, increase in sales and profits (Chandler & Hanks, 1993; Lee & Tsang, 2001; Tesheen & Anderson, 2020). This study measured growth in terms of sales increase, profitability and customer numbers. Literature on the growth of an enterprise suggest that most businesses go through life cycles whereby they start and experience a myriad of challenges as they progress towards maturity and finally decline. Among the factors that contribute towards an enterprise moving from one cycle/ stage to another are the business environment, strategic competency, history of the enterprise, business location, among others (Gupta, Gupta, & Krishnaswami, 2013). There is a proven link between strategic competency and performance of an enterprise (Tehseen & Anderson, 2020) and this link is influenced by different contexts (Ng & Nee, 2013; Namusonge, 2014).

Review of Empirical Literature Strategic competency and growth of aquaculture based small enterprises

When there is clarity of vision and focus on achieving it, an entrepreneur gains the ability to establish suitable strategies that provide linkages to acquire and utilize resources within a firm set-up thereby resulting in business growth (Pepple & Enuoh, 2020). Strategies enhance the ability of

entrepreneurs to exploit opportunities identified from constant monitoring of the internal and external environment, adapt quickly to change, be sensitive to employee welfare (motivation and capacity building) thus contributing to improved efficiency and business growth (Kyrgidou, et al. 2021).

A study by Sidek and Mohamad (2014), on the relationship between strategic competency and small business growth established that technical, interpersonal and conceptual competencies contribute substantially to business growth. The study was conducted on 238 small business owners in Malaysia. The respondents were entrepreneurs who had benefitted from a microfinance program and were entrepreneurs in different sectors of Malaysian economy, therefore purposive sampling was used. Through structured self-administered questionnaires and by use of structural equation modelling, 79.3% of the respondents expressed the importance of strategic competency in launching and growing their businesses. The study also established that interpersonal skills/ human skills were more dominant than technical and conceptual competencies in the growth of a business.

A study by Malik, Khan, Bhutto and Ghouri (2011), on managerial skills and organizational learning in SMEs in Pakistan established that there exists a strong relationship between a manager's strategic skills and small business growth. The study was conducted on 145 managers of SMEs in the cities of Karachi and Hyderabad, who had over 2 years of experience running companies or businesses. The study adopted the Katz (1955) model with data collected by use of interviews and questionnaires. Data was analyzed through Pearson correlation coefficient and regression and determined that human/ interpersonal skills were vital in the growth of businesses in Pakistan especially due to the informal training methods occasioned by learning by capabilities within SMEs in the country. The workers depended on the managers to effectively communicate their expectations and demonstrate how they needed their work done.

A cross-sectional study by Mwaniki (2018), established the importance of strategic competency on women entrepreneurs. The study's respondents were 358 women entrepreneurs in Bungoma County, Kenya who had businesses in various sectors. The study used proportionate and simple random sampling methods to sample the entire population of women entrepreneurs in the county. Data collection was done using self-administered questionnaires and analysis was done through Structural Equation Modelling. The study established that strategic competency significantly and positively affected the growth of women owned businesses in Bungoma County, Kenya..

Research Methodology

This study adopted a descriptive research design using mixed methods approach and was guided by the positivist approach because this approach is effective when working with quantitative data. The target population for this study was 600 pond fish farmers in Nyeri County who were identified from the Nyeri County Government's Department of Fisheries office, Nyeri. The unit of analysis are aquaculture-based small enterprises in Kenya while the unit of observation are pond fish farmers in Nyeri County, Kenya. Purposive sampling was conducted to select pond fish farmers within Nyeri County as they formed majority of the pond fish farming population within the Mt. Kenya and Aberdare economic bloc in Kenya. Then, stratified sampling was done to identify the

pond fish farmers in their various sub-counties within Nyeri County. Simple random sampling was then utilized to select respondents for the study. Moreover, purposive sampling was utilized to select 7 key informants who were interviewed by the researcher. They were fisheries extension officers who each represented the 7 sub-counties within Nyeri county.

The study adopted Yamane's (1967) sample size formula to calculate a sample size 240 pond fish farmers in Nyeri County.

The data collection instrument that was used in this study was a semi-structured selfadministered questionnaire. The data collected from the study was edited to identify and eliminate errors made by respondents. Then it was coded to translate question responses into specific categories by assigning numbers to various responses. Quantitative data on demographic variables and individual items within the questionnaire were analyzed by descriptive statistics while qualitative data was analyzed through construct and content analysis through guidance from research supervisors and experts in the area. Inferential statistics analyzed the relationship between the independent and dependent variable. The study used the following regression model:

$$y = \beta_0 + \beta_1 X_1 + \varepsilon$$

y = Dependent variable representing Growth, β_0= Intercept, β = Regression Coefficient relating to the independent variable to the dependent variable, X_1 = Strategic Competency and ε =error term.

Results Response Rate

The study aimed to collect data from a sample of 240 respondents in small scale aquaculturebased enterprises in Nyeri County, Kenya. However, of the 240 questionnaires that were distributed to the respondents, 214 of them were filled and returned giving a response rate of 89%. The 26 questionnaires that were not returned made a non-response rate of 11%. The response rate of 89% was considered sufficient for analysis and for making inferences. This conclusion agreed with Creswell & Creswell (2022) who opined that a response rate of below 50% was adequate for conclusive findings. A response rate of above 70% is considered very good hence is sufficient for analysis.

Strategic Competency and Growth Empirical Findings on Strategic Competency

The study sought to establish whether the respondents were aware of the projected directions of the fish farming industry and how those changes might impact their fish farm businesses. Further, the study evaluated the ability of the respondents to organize different resources as well as plan and conduct business operations. Statements that were designed to get responses were developed on a five-point Likert scale ranging from 1 – 5, where 1 indicated 'Strongly Disagree', 2 indicated 'Disagree', 3 indicated 'I am not Sure', 4 indicated 'Agree', and 5 indicated

'Strongly Agree'. 'Strongly Disagree' was abbreviated as SD, 'Disagree' as D, 'I am not sure' as NS, 'Agree' as A, and 'Strongly Agree' as SA. The mean (*M*) and Standard Deviation (*SD*) of each statement have also been indicated. The findings are indicated in the table below. Of the respondents, 32.2% strongly agreed that they had the ability to organize business resources while 24.8% agreed. However, 16.8% of the respondents strongly disagreed that they had the ability to organize business resources. Overall, the respondents agreed (*M*=3.39, *SD*=1.493) that they had

the ability to organize business resources that necessitated the growth of their fish farm businesses. These findings agree with Tehseen et al. (2019) that strategic competency in entrepreneurs is demonstrated by their ability to allocate resources according to the daily activities that culminate to achieving the set goals and objectives.

Secondly, 29.9% of the respondents strongly agreed that they had the ability to plan for daily activities while 28.5% agreed on the same. However, 12.1% were not sure if they had the ability to plan for daily activities. 13.6% and 15.9% strongly disagreed and disagreed respectively that they had the ability to plan for daily activities. Overall, the respondents agreed (M=3.45, SD=1.409) that they had the ability to plan for daily activities. Small day to day actions lead to big achievements over time. Therefore, entrepreneurs who are able to plan accordingly and breakdown the plans to actionable daily activities are with time able to achieve their goals and objectives. These findings therefore agree with Sidek and Mohamad (2014) that effective entrepreneurship involves performing daily activities that are geared towards achieving a set vision. Of the respondents, 22.9% strongly agreed while 35% agreed that they had the ability to identify long-term challenges and opportunities in the industry. However, 9.3% were not sure. 13.6%, 19.2% strongly disagreed and disagreed respectively that they had the ability to identify long-term challenges and opportunities in the industry. Overall, the respondents agreed (M=3.35, SD=1.375) that they had the ability to identify long-term challenges and opportunities in the industry. The ability to understand the market well and predict the future allows entrepreneurs to gain control of their decisions and adequately prepare for challenges. They are also able to take on opportunities and work towards achieving business growth (Pepple & Enuoh, 2020).

On ability to prioritize business, 28.5% strongly agreed while 28% agreed that they had the ability to prioritize their fish farm business over other activities. However, 16.8% and 13.1% strongly disagreed and disagreed respectively that they had the ability to prioritize their businesses over other activities. Overall, the respondents agreed (M=3.38, SD=1.445) that they had the ability to prioritize their businesses over other activities. These findings agree with Pepple and Enuoh (2020) who opined that an entrepreneur's ability to continuously perform daily activities that are geared towards achieving certain goals culminates in the realization of business growth. Of the respondents, 24.3% of the respondents strongly agreed that they had the ability to plan how to achieve the firm's vision while 30.4% agreed on the same. On the other hand, 13.6% strongly disagreed and 18.2% disagreed that they had the ability to plan how to achieve the firm's vision. Overall, the respondents agreed (M=3.34, SD=1.377) that they had the ability to plan how to achieve the firm's vision. Moreover, 27.1% of the respondents strongly agreed while 25.2% agreed that they were capable of aligning current actions with long-term objectives. However, 21% were not sure if they were capable of the same. 15.4% strongly disagreed while 11.2% disagreed that they had the ability to align current actions with long-term objectives. Overall, the respondents agreed (M=3.37, SD=1.391) that they had the ability to align current actions with long-term objectives. These findings agree with Kyrgidou et al. (2021) that successful entrepreneurs are able to align their vision with internal and external environments and are quick to adapt to change. Thus, they adjust their plans accordingly and align their actions based on the adaptations and requirements of the environment.

Table 1: Descriptive Statistics Analysis of Strategic Competency on Growth

Strategic Planning Competency

Statement	SD	D	NS	A	SA	Mean	Std. Deviation
Ability to organize business resources	16.8%	16.4%	9.8%	24.8%	32.2%	3.39	1.493
Ability to plan for daily business activities	13.6%	15.9%	12.1%	28.5%	29.9%	3.45	1.409
Ability to identify longterm challenges/opportunities in industry	13.6%	19.2%	9.3%	35.0%	22.9%	3.35	1.375
Ability to prioritize business	16.8%	13.1%	13.6%	28.0%	28.5%	3.38	1.445
Ability to plan how to achieve the firm's vision	13.6%	18.2%	13.6%	30.4%	24.3%	3.34	1.377
Ability to align current actions with long term objectives	15.4%	11.2%	21.0%	25.2%	27.1%	3.37	1.391

Challenges faced in commitment to long-term planning: Majority of the respondents cited inability to access consistent and reliable market for their fish. According to KMFRI (2021), most fish farmers lack adequate market information. Such information may comprise of consistent market outlets, direct access to customers, and pricing for different market segments. The fish farmers become exposed and vulnerable to unscrupulous middlemen and they end up selling their fish at throw-away prices. Fish farmers also experience inadequate industry information. According to responses from fisheries officers, fish farmers are not well exposed to the entire fish value chain which in Kenya is heavily reliant on networks. In contrast to other familiar value chains in Nyeri county such as dairy farming, fish farming is generally new and technical thus requiring constant access to information. Further, research findings that would be of integral benefit to farmers in fish management does not trickle down to them hence they are left behind. Secondly, access to high quality, lowly priced fish feed was a challenge cited by the respondents that affected their commitment to long-term planning. This is because most fish farmers would receive initial fish feed from county government bodies and/or NGOs but once the feeds depleted, farmers would not be able to afford the feeds due to high prices. They would therefore resort to making their own feed whose quality was not as per standards and ingredients would be largely unknown.

Sometimes, such feed would not be appropriate for different types of fish due to different protein requirements or poor quality caused by sub-standard raw materials (Obwanga et al., 2020).

Moreover, another challenge cited by respondents was inadequate water capacity. These findings agree with Munguti et al. (2017), that the Nyeri County region is generally water-stressed and the available water sources are inadequate in meeting the water requirements for fish farming.
The study found that majority of the respondents depended on water from the county government to put into the fish ponds, but due to the inconsistencies in water supply, farmers found it risky to farm large amounts of fish. This contributed to stagnation or high failure rates among the fish farmers in Nyeri County. Additionally, respondents cited lack of fish farm management skills as a challenge that they faced in their commitment to long-term planning. The lack of knowledge meant that some respondents would practice fish farming through trial and error. They cited limited knowledge on fish diseases, propagation of fingerlings, and inadequate equipment that demonstrated a knowledge gap in aquaculture. Moreover, the respondents cited poor extension services as the available personnel were not enough to meet the demands of the entire sub-county and/or they lacked the knowledge necessary to diagnose problems and offer solutions. These findings agree with Rurangwa *et al.* (2018) that government personnel lack appropriate technological capacity and equipment to conduct proper extension services to fish farmers thereby becoming a hindrance to the growth of aquaculture in the region. **Analysis on the Interaction between Strategic Competency and Growth**

Correlation analysis was used in the study to examine the relationship between strategic competency (X_2) and growth (Y). The results indicate that there was a weak inverse linear statistical significance at r -0.241: $p \leq 0.01$.

Table 2: Correlation between Strategic Competency and Growth Correlations

Variable		Y
X_2	Pearson Correlation	-.241**
	Sig. (2-tailed)	.000
	N	214

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

Chi Square Test was used to test the strength of association between Strategic Competency and Growth. The results were: $x^2(800, N = 214) = 900.959$, $p = 0.007$. The significant value of 0.007 was less than 0.05 therefore revealing that there is a statistically significant association between Strategic Competency and Growth.

Table 3: Chi Square Test on Strategic Competency

Chi-Square Test on Strategic Competency	
Chi-Square	900.959[a]

Df	800
Asymp. Sig. (2-sided)	.007

a. 861 cells (100.0%) have expected count less than 5. The minimum expected count is .00.

Regression analysis was carried out to determine whether strategic competency is a significant determinant of growth of aquaculture based small enterprises in Kenya. Based on the results, Strategic Competency accounts for only 5.8% of the variation in the growth of aquaculture based small enterprises in Kenya. 94.2% of variation in the growth of aquaculture based small enterprises in Kenya is explained by other factors.

Table 4: Regression Model Summary of Strategic Competency and Growth

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.241[a]	.058	.054	1.011

a. Predictors: (Constant), X_2

According to the study, the significance value in testing the reliability of the regression model for the relationship between strategic competency and growth was $F(1, 212) = 13.048$, $p<0.000$. Therefore, the regression model is significant to statistically predict the relationship between the study variables.

Table 5: ANOVA of Strategic Competency and Growth ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.346	1	13.346	13.048	.000[b]
	Residual	216.840	212	1.023		
	Total	230.185	213			

a. Dependent Variable: Y
b. Predictors: (Constant), X_2

The relationship between strategic competency and growth was found to be explained by the model; $Y = \beta_0 + \beta_2 X_2 + \varepsilon$

Where; Y= Dependent Variable (Growth); β_0 = Constant, $\beta_2 X_2$ = Independent Variable (Strategic Competency), and ε = Error term.

The regression model was therefore; $Y = 4.344 - 0.288X_2$

The regression results indicate that the p value for strategic competency was 0.000. Since that p value was less than 0.05 set by the study, the alternate hypothesis (H_{a1}: Strategic competency plays a significant role on growth of aquaculture based small enterprises in Kenya) was accepted. The

study therefore, established that strategic competency significantly influences the growth of aquaculture based small enterprises in Kenya. These findings agree with Ismail (2022), who established that majority of small enterprises do not mature for an extended period as the ownermanager lacks appropriate strategies to propel the businesses forward. These indicates that strategic competency is a fundamental contributor to business growth.

Table 6: Coefficients of Strategic Competency and Growth Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.344	.278		15.610	.000
	Strategic Competency	-.288	.080	-.241	-3.612	.000

a. Dependent Variable: Growth

Conclusion

The study's objective was to determine the effect of strategic competency on growth of aquaculture-based small enterprises in Kenya. The study sought to establish whether fish farmers understood the aquaculture industry well including projected industry directions and the effect these directions would have on their businesses. Strategic competency was measured in terms of entrepreneur's ability to organize business resources that necessitated growth of their businesses, ability to plan daily activities, ability to identify long-term challenges and opportunities in aquaculture industry, ability to prioritize activities as well as ability to align current daily actions with the long-term objectives of the business. The findings indicated a positive statistically significant relationship on strategic competency and its effect on growth. Further, regression analysis of the results established that strategic competency was found to account for 5.8% of the variation in the growth of aquaculture-based small enterprises in Kenya. 94.2% of variation in the growth of aquaculture based small enterprises in Kenya is explained by other factors outside the model.

Recommendations

Since the study sought to establish whether the declining growth in aquaculture-based small business was caused by poor strategic competencies or lack thereof, the study established that strategic competencies were not the reason for declining growth in aquaculture-based small enterprises. Instead, other factors that were outside the scope of study affected growth of the enterprises. First, the study recommends sustained government and NGO support in aquaculture. This could be in the form of consistent provision of inputs that would allow fish farmers to start and run their fish farms successfully, However, to avoid over reliance on such support, the cost of inputs should be subsidized and cottage industries allowed to thrive. This would create business opportunities along the aquaculture value chain such as such as fingerling production, manufacture of fish feed and aggregation. Standardization of feed formulation would also enhance the quality of fish feed and shield fish farmers from buying sub-standard feeds that would jeopardize their

efforts towards achieving high fish yields. Further, the government through the County Government should employ more extension officers and equip them with fish farm and business management knowledge and machinery that would enable them adequately reach and be of efficient service to fish farmers. Since Nyeri county is a water-scarce area, water harvesting should be encouraged to reduce overreliance on city council water. Further, extension officers should be equipped with water analytical kits that would help to test water quality and effectively diagnose fish diseases, prevention and cure so as to mitigate against fish mortality.

Moreover, identifying regions that have thrived in aquaculture and conducting farmer excursions would give exposure and encourage fish farmers to learn from others with the aim of replicating what works in their own fish farms and business operations. This would encourage fish farmers to farm more fish thereby increasing the volumes of market-ready produce. The study further recommends public-private partnerships that would coordinate markets and provide platforms for farmers to sell their produce. This demand-driven approach would ensure supply of fish as at when needed by the market thus avoiding post-harvest losses and loss of income. Finally, the study recommends intense dissemination of information on fish farming to rural populace to address the existing knowledge gap. Fish farmers should be encouraged to engage in farming of the most suitable type of fish based on different geographical areas. Some cold areas within Nyeri County would do well with trout fish while others would be better off with tilapia fish. By zoning such areas, farmers are assured of minimal fish mortality and better yields which would fetch higher prices in the market.

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