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

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ABSTRACT

Purpose: This study evaluated the influence of commitment competency on growth of 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 self-administered 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 that commitment competency and growth had weak inverse linear statistical relationship. The study concluded that fish farmers are already aware of the many hurdles involved in fish farming but they remain resilient in doing what it takes to achieve the goals set for their fish farms. It is not the lack of commitment on their part that contributes to the stagnating or declining of their businesses. Instead, other challenges such as lack of crucial inputs such as reliable and quality feeds, quality fingerlings, adequate water, lack of business management knowledge, lack of market accessibility and capital contribute to the dismal performance of their businesses.

Unique Contribution to Theory, Practice and Policy: The government and NGOs should provide subsidized inputs and promote cottage industries to enhance aquaculture value chains. In addition, extension officers should be equipped with resources like water testing kits, and water harvesting should be encouraged in water-scarce areas.

Key Words: *Commitment 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 commitment 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 2014-2019 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 commitment competencies 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 commitment competencies 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 entrepreneurial commitment and growth of small enterprises in aquaculture. This study therefore seeks to fill this knowledge gap.

Hypothesis

H_{a1}: Commitment competency has significant effect on growth of aquaculture based small enterprises in Kenya

Literature Review

Theoretical Review

Need for Achievement theory

The need for achievement theory was established by David McClelland in 1961. McClelland contended that people are inspired by three forms of needs. These are need for achievement – the aspiration to attain and to make progress; need for power- the longing for effect, prestige and leadership; and need for connection - the yearning to make agreeable and close relational connections (McClleland, 1961). This study will concentrate on the need for achievement based on the argument by Shane et al. (2003) that entrepreneurship is mainly anchored on this need. Studies have indicated evidence of a relationship between achievement motivation and entrepreneurship (Shane et al., 2003). According to the theory, individuals who possess the need to achieve (high nAch) find their way into entrepreneurship with a higher success rate than those

who do not possess it (Low nAch) (Littunen, 2000). This is because high nAch individuals choose careers that have high levels of responsibility, that involve skill and challenging work, that provide immediate performance feedback, constitute moderate risk-taking and have potential for the future (McClelland, 1961). They are more likely to overcome obstacles, utilize resources effectively and where they lack skills in certain areas, they will be proactive in finding ways to improve their knowledge and competencies (Botha et al., 2006). The Need for Achievement Theory is important to this study as it deduces the commitment competency that propel individuals to venture into entrepreneurship and to manage and grow their businesses in a sustainable manner.

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 commitment 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

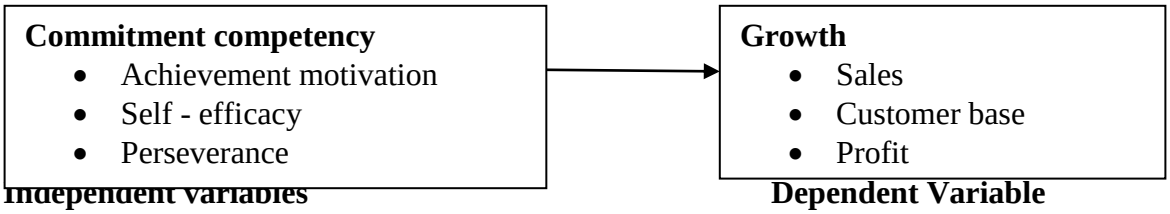

Figure 1: Conceptual Framework

Commitment Competency and growth of aquaculture based small enterprises

Commitment is a state of being dedicated to a certain cause or activity. According to Man et al., (2002), commitment competency denotes the behaviors that drive entrepreneurs to proceed with their entrepreneurial activities despite facing hurdles. Irene, (2016) describes such behaviors as remaining focused in the midst of business failure and rejecting the failure mindset; engaging in skills and personal development that in turn have a positive impact on the business; engaging in ethical business practices and being responsible for the welfare of workers, end-users and other stakeholders; as well as fidelity to the strategies and long-term objectives of the organization. Moreover, commitment in entrepreneurs is displayed in their zeal to achieve long-term goals, aggressiveness in taking initiatives and generally having a winning attitude (Noor and Mamun, 2018). The need for achievement, that is the motivation to achieve better and/or faster than others was found to be most inherent in small business owners. This zeal to be the best among peers enhances the chances of successful of entrepreneurial efforts, thus contributing to enterprise and personal growth (Abdullah et al., 2016). Successful entrepreneurs ensure that they do what it takes to meet customer demands and requirements as well as achieve competitive advantage. They therefore have a tendency to make personal sacrifices such as working long hours, delayed gratification and maintain high energy levels in their quest to meet set goals with passion and dedication (Noor and Mamun, 2018). Further, an individual's conviction that he/she is capable of successfully running an enterprise increases their perseverance and effort levels towards meeting the set objectives (Abdullah et al., 2016). The willingness to overcome impediments and motivation to pursue set objectives while tolerating ambiguity characterize successful entrepreneurs (Irene, 2016).

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, commitment competencies, history of the enterprise, business location, among others (Gupta, Gupta, & Krishnaswami, 2013). There is a proven link between commitment 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

Commitment competency and growth of aquaculture based small enterprises

The performance of a business, whether positive or negative relies heavily on the decisions made by an entrepreneur. These decisions are determined by personal attributes, knowledge and experience, skills, capabilities and resolve to achieve set goals (Mitchelmore and Rowley, 2013).

A cross-cultural study by Irene, (2016) on the impact of commitment competency on South African female entrepreneurs across four racial clusters indicated the importance of commitment's competency on the growth of SMEs. The qualitative study was conducted on 50 female entrepreneurs who were purposively selected based on their business experience and race. Key informants from similar sectors as the women were grouped into 10 focus groups and the study was conducted over a 10 months' period. On analysis of the data, the study determined that 61% of the total respondents expressed that commitment competency was extremely vital for the growth of their SMEs. The study concluded that the entrepreneurial behavior of not giving up on a business or willingness to resume upon failure displayed passion of an individual, which enables one to face hurdles with a certain level of calmness. It was therefore important for business growth and sustainability.

A study by Noor and Manun (2018), on the effect of entrepreneurial competency on the growth of women owned businesses in Kelantan, Malaysia reported that commitment competency demonstrated decidedly affects the growth of SMEs. The study was conducted on 384 women entrepreneurs using cross-sectional design and involved collecting quantitative data using questionnaires. Convenient sampling method enabled the researchers to identify night market

businesses owned by women in Kelantan, Malaysia. Data was analyzed using variance-based structural equation modelling and indicated that 67% of the women expressed the importance of devotion to meet objectives and willingness to make sacrifices in order for businesses to grow and become successful.

According to Eijdenberg (2016), motivation can be categorized into two areas; necessity and opportunity motivation. Opportunity driven entrepreneurs are motivated to attain success through exploiting opportunities for economic benefit while necessity driven entrepreneurs are motivated by the need to survive. Opportunity entrepreneurship is the voluntary nature in which entrepreneurs choose to participate while necessity entrepreneurship involves pressure to start a business due to some negative circumstances such as unemployment or poverty, hence is more predominant in emerging economies. For entrepreneurship to occur, there must be an intersection of an individual's perception of the opportunity and the motivation and skills to pursue that opportunity. These observations were based on a study conducted in Tanzania whose respondents were 27 interviewees and 152 small scale entrepreneurs from the informal economy of the country. Data was gathered using interviews and questionnaires and analyzed using correlation analysis, factor analysis and regression analysis. The study aimed at establishing whether the launch and growth of a business is influenced by motivation or entrepreneurial orientation of the individual. The study concluded that entrepreneurial motivation does not have any impact within the informal economy as individuals are motivated by different reasons that are outside of their control to start and grow business ventures.

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 self-administered 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:

$$\boldsymbol{y = \beta_0 + \beta_1 X_1 + \varepsilon}$$

$y =$ Dependent variable representing Growth, β_0= Intercept, β_1 = Regression Coefficient relating to the independent variable to the dependent variable, X_1 = Commitment competency and ε =error term.

Results

Response Rate

The study aimed to collect data from a sample of 240 respondents in small scale aquaculture-based 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.

Commitment Competency and Growth

Empirical Findings on Commitment Competency

The study sought to establish the respondents' views on perseverance and their commitment to long term business goals. The statements also sought to interrogate how the respondents maintain high energy levels and motivation despite challenges that they face in their pursuit to grow their fish farm businesses. 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 presented in Table 1.

Most of the respondents 30.8% strongly agreed that they were motivated to work in their own businesses than for someone else. 30.8% agreed on the same while 13.1% were not sure. However, 13.6% strongly disagreed and 11.7% disagreed. Overall, the respondents agreed (*M* 3.5374, *SD*=1.386) that motivation to work in their own business was higher than working for

someone else. These findings are in agreement with Abdullah et al. (2016), who opined that entrepreneurs have an inherent need to achieve better results and faster than their peers. They therefore would avoid situations that would make them be perceived as lesser than others and this zeal enhances their chances to succeed in their entrepreneurial efforts. Secondly, 28.5% strongly agreed that they were motivated to succeed in their own businesses. 31.8% agreed while 12.6% were not sure that they were motivated to succeed in their own business. 12.1% strongly disagreed and 15% disagreed that they were motivated to succeed in their own business. Overall, the respondents agreed (*M* 3.495, *SD*=1.363) that motivation to succeed in their own aquaculture-based businesses contributed to the growth of the small businesses.

Majority of the respondents, 33.2% agreed and 23.8% strongly agreed that they were motivated to achieve the vision of their business. The mean (3.40) and *SD* (1.342) could be attributed to their perception of aquaculture and its future prospects that encouraged them to strive to achieve the vision of their businesses. These findings agree with Eijdenberg (2016), who cited that for entrepreneurship to occur and succeed, there must be an intersection of an individual's perception of an opportunity and motivation to pursue the same. However, 15.4% were not sure while 27.6% strongly disagreed and disagreed that they were motivated to achieve the vision of the business. Perhaps they did not have a vision for their fish farm business and hence did not have anything to look forward to. According to the findings, 28.5% of the respondents strongly agreed that they were confident to grow their business while 27.6% agreed on the same. These respondents may have been trained on fish farm management and had years of experience in the business so they felt capable. However, 15% and 11.7% strongly disagreed and disagreed respectively that they were confident to run their business. They may not have received any prior training or had faced challenges that had affected their confidence in growing their businesses.

On dedication of time to make the business succeed, 31.3% strongly agreed and 29.9% agreed that they dedicated adequate amount of time to their businesses. This was mean of 3.495 and *SD* of 1.436. These findings agree with Noor and Mamun (2018), who found that successful entrepreneurs make personal sacrifices, are passionate and work with dedication for long hours in their quest to achieve set goals and objectives. Of the respondents, 30.4% strongly agreed that they maintained a positive attitude while 28% agreed on the same. These findings positively relate to Irene (2016), that successful entrepreneurs are willing to overcome challenges and tolerate high uncertainty levels as they pursue opportunities all the while maintaining a positive attitude to achieve their goals.

Table 1: Descriptive Statistics Analysis of Commitment Competency and Growth

Commitment Competency							
Statement	**SD**	**D**	**NS**	**A**	**SA**	**Mean**	**Std. Deviation**
Motivation to work in own business than for someone else	13.6%	11.7%	13.1%	30.8%	30.8%	3.54	1.386
Motivation to succeed in own business	12.1%	15.0%	12.6%	31.8%	28.5%	3.50	1.363
Motivation to achieve the vision of business	13.1%	14.5%	15.4%	33.2%	23.8%	3.40	1.342
Confidence to grow own business	15.0%	11.7%	17.3%	27.6%	28.5%	3.43	1.398
Dedicate time to make the business work	15.9%	11.2%	11.7%	29.9%	31.3%	3.50	1.436
Maintain a positive attitude	15.9%	9.8%	15.9%	28.0%	30.4%	3.47	1.420

Motivation to grow aquaculture-based businesses: To increase motivation and encourage other fish farmers to grow their businesses, most of the respondents cited provision of high quality and cheap fish feed. Quality and affordable fish feed has been a major challenge to the growth of aquaculture in Kenya (KMFRI, 2021). With the biting economic situation in the country, most fish farmers were unable to meet the costs of available feed in the market hence resorted to formulating their own. Because of lack of standardization, the quality of such home-made feed was unknown and had the potential of being infiltrated by pathogens (Obwanga et al., 2020). However, according to the study findings, the respondents wished to seize such an opportunity to establish cottage industries that dealt with the formulation of fish feed. This they believed would make the feed available, cheaper and would improve the reliability of the supply chain as well as reduce production costs, thus grow their businesses. In addition, fisheries officers opined that as part of projects by GoK and other agencies, sometimes the project outputs involved provision of high-quality fish feeds to farmers. While this initiative served to motivate farmers, it was not sustainable. This was because sometimes the distributed feeds were not enough to reach all the farmer beneficiaries, were not adequate to meet farmer needs and in the event the feeds ran out, farmers were not able to replenish with the same high-quality types. In desperation, they would resort to feeding the fish on substandard feeds. This would have dire consequences on the fish maturity duration, the quantity and the quality of fish output.

Moreover, respondents cited availability of markets for grown fish as a vital source of motivation for aquaculture. Respondents cited challenges with access to a variety of market channels and direct linkages with end-consumers that avoid middlemen. These findings agree with KMFRI (2021), that fish farmers have inadequate market information. This has the potential to negatively

affect sales returns and profits and can discourage them. Fisheries extension officers were in agreement with these findings and added that incorporating technology in form of mobile phone apps would help connect fish farmers, provide valuable market information and management insights and provide opportunities for learning and benchmarking with other fish farmers. Other areas cited by respondents that would increase motivation for fish farmers to grow their businesses were provision of modern equipment, water and quality fingerlings. Fish farming has high initial capital investment that leads to high barriers to entry. Majority of the fish farmers relied on government and/or NGO support especially for initial farm inputs such as dam liners, net coverings and quality fingerlings thus creating dependence on donor support (KMFRI, 2021). Fisheries extensions officers added that the use of technology and modern technical equipment would adequately improve farm management. Water quality would be tested periodically, growth of fish would be monitored, optimization of feeding practices as well as enhanced efficiency in the management of fish diseases to reduce mortality. Further harvesting would be made easier due to ease of sampling thus reducing post-harvest losses.

Further, respondents cited that to increase motivation, there was need for enhanced standards of extension services. Inadequate extension services and technical support (Munguti et al., 2017; Obwanga et al., 2020; KMFRI, 2021) are factors that hindered the growth of fish farming in Kenya. Aquaculture small businesses are characterized by small-scale entrepreneurs who rely on expert information on fish management. Thus, lack of such support discourages them and hinders growth of their businesses. Response from fisheries extension officers agreed with these findings in that there was scarcity of manpower to cope with the large rural areas in Nyeri County. Some far-flung rural areas could only be accessed by motorcycle which would sometimes be short of fuel and once broken down, would lack funds for repair and maintenance due to delays.

Analysis on the Interaction between Commitment Competency and Growth

Correlation analysis was used in the study to examine the relationship between commitment competency (X_1) and growth (Y). The results revealed that there was a weak inverse linear statistical significance at r -0.295: $p \leq 0.01$.

Table 2: Correlation between Commitment Competency and Growth

Correlations

		Y
X_1	Pearson Correlation	-.295**
	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 Commitment Competency and Growth. The results were: $x^2(760, N = 214) = 960.909$, $p = 0.000$. The significant value of 0.000 was less than 0.05 therefore revealing that there is a statistically significant association between Commitment Competency and Growth.

Table 3: Chi Square Test on Commitment Competency

Chi-Square Test on Commitment Competency	
Chi-Square	960.909[a]
Df	760
Asymp. Sig. (2-sided)	.000

a. 820 cells (100.0%) have expected count less than 5. The minimum expected count is .00.

Regression analysis was carried out to determine whether commitment competency is a significant determinant of growth of aquaculture based small enterprises in Kenya. According to the results, commitment competency accounts for only 8.7% of the variation in the growth of aquaculture based small enterprises in Kenya. 91.3% of variation in the growth of aquaculture based small enterprises in Kenya is explained by other factors.

Table 4: Regression Model Summary of Commitment Competency and Growth

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.295[a]	.087	.083	.996

a. Predictors: (Constant), X_1

According to the study, the significance value in testing the reliability of the regression model for the relationship between commitment competency and growth was $F(1, 212) = 20.266$, $p<0.000$. Therefore, the regression model is significant to statistically predict the relationship between the study variables.

Table 5: ANOVA of Commitment Competency and Growth

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.084	1	20.084	20.266	.000[b]
	Residual	210.101	212	.991		
	Total	230.185	213			

a. Dependent Variable: Y
b. Predictors: (Constant), X_1

The model that was used for the regression analysis was; $Y = \beta_0 + \beta_1 X_1 + \varepsilon$

Where; Y= Dependent Variable (Growth); β_0 = Constant, β_1 X_1 = Independent Variable (Commitment Competency), and ε = Error term.

The regression model was therefore; $Y = 4.610 - 0.357X_1$

The regression results indicate that the p value for commitment competency was 0.000. Since that p value was less than 0.05 set by the study, the alternate hypothesis (H_{a1}: Commitment competency has significant effect on growth of aquaculture based small enterprises in Kenya) was accepted. The study therefore, established that commitment competency influences the growth of aquaculture based small enterprises in Kenya. The findings agree with Abdullah et al. (2016) who established that the need for achievement, which is most inherent in small business owners enhances the success chances of entrepreneurial efforts, thus contributing to enterprise growth.

Table 6: Coefficients of Commitment Competency and Growth

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.610	.284		16.251	.000
	X_1	-.357	.079	-.295	-4.502	.000

a. Dependent Variable: Y

Conclusion

Whilst venturing into business, entrepreneurs set objectives and goals to attain as a measure of success for their businesses. When these goals become untenable or take time to achieve, the entrepreneurs' tenacity is seen by the actions they take. The study concluded that fish farmers are already aware of the many hurdles involved in fish farming but they remain resilient in doing what it takes to achieve the goals set for their fish farms. It is not the lack of commitment on their part that contributes to the stagnating or declining of their businesses. Instead, other challenges such as lack of crucial inputs such as reliable and quality feeds, quality fingerlings, adequate water, lack of business management knowledge, lack of market accessibility and capital contribute to the dismal performance of their businesses. These factors greatly affect small holder fish farmers due to the risk involved in fish farming. Aquaculture is heavily dependent on many factors that may be beyond the reach of the farmer. For example, aquaculture in Kenya is heavily supported by GoK and NGOs whereby without their support, farmers are not able to sustain their businesses despite their levels of commitment to achieving their business goals.

Recommendations

Since the study sought to establish whether the declining growth in aquaculture-based small business was caused by poor commitment competency or lack thereof, the study established that commitment competency 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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