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# ENTREPRENEUR AND ENTERPRISE CHARACTERISTICS AS CORRELATES OF SUCCESS OF CAGE FISH FARMING IN THE ASUOGYAMAN AND SOUTH DAYI DISTRICTS OF GHANA

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF MASTER OF PHILOSOPHY IN AGRICULTURAL EXTENSION DEGREE**

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**LEGON**

**JUNE, 2014**

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# DECLARATION

I, Wisdom Kwadzo Kumah hereby declare that this thesis, "Entrepreneur and enterprise characteristics as correlates of success of cage fish farming in the Asuogyaman and South Dayi Districts of Ghana" is the result of my own original work and that no part of it has been presented for another degree or examination in this university or elsewhere, and that all the sources I have quoted have been duly indicated and acknowledged as complete references.

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# ABSTRACT

Aquaculture is becoming a very important source of income and a source of protein in the diets of many. Over the past few years, efforts were made by individuals and groups to venture into cage fish farming on the Volta Lake in the Asuogyaman and South Dayi districts of Ghana. However, many of these farms were not sustained. This study examined the relationship between entrepreneur and enterprise characteristics and success of small scale cage fish enterprises in the two districts. The research employed a descriptive-correlation survey design which used the quantitative method. A standardised questionnaire with close and open ended questions was used to collect data from 105 owners and managers of the enterprises. Data were analysed using the Statistical Package for Social Sciences (SPSS) software. The results reveal a significant positive relationship between age of entrepreneurs and customer satisfaction, and also between experience of entrepreneurs and growth in sales. Technical know-how, attitude towards work, start-up experience and managerial skills all showed significant positive relationship with profitability and customer satisfaction. Attitude towards work and age of enterprise also had significant positive relationship with growth in sales. Apart from educational levels of entrepreneurs, all the other variables studied showed positive relationship with enterprise success. In conclusion, even though the characteristics of the entrepreneur and enterprise had positive relationship with enterprise success, not all these relationships were significant. It is recommended that cage fish farmers should be equipped with more technical and entrepreneurial skills, and also take those precautions which will help reduce the risk of failure, and increase the chances of success and survival of their enterprises.

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# DEDICATION

To my loving wife Peace, my mother Mercy, my grandmother Sara, and my great grandmother, Christiana. These wonderful women made indelible marks on my life.

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# ACKNOWLEDGEMENT

I would like to express my deepest appreciation and gratitude to my Supervisors, Dr Jonathan N. Anaglo and Dr Comfort Freeman for their time, patience, guidance, suggestions and corrections. My gratitude also goes to my lecturers Dr Paschal Atengdem, Dr Owuraku Sakyi-Dawson and Dr Samuel D. Boateng of the Department of Agricultural Extension, University of Ghana, Legon for the various kinds of knowledge they imparted to me. Their mentoring has transformed me into a research scientist.

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Last but not least, I appreciate the wonderful patience and support of my family especially my wife Peace, whose assurances and encouragements greatly motivated me to complete this project. God bless you all!

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| AEAs | Agricultural Extension Agents |
| AGI | Association of Ghana Industries |
| CERSGIS | Centre for Remote Sensing and Geographic Information Services |
| EUR | The Euro |
| FAO | Food and Agriculture Organization of the United Nations |
| GHS | Ghana Health Services |
| MoFA | Ministry of Food and Agriculture |
| MSL | Mean Sea Level |
| NBSSI | National Board for Small Scale Industries |
| NGOs | Non-governmental Organisations |
| PEM | Protein-energy malnutrition |
| SMEs | Small and medium-sized enterprises |
| SPSS | Statistical Package for Social Sciences |
| USD | United States Dollar |

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# CHAPTER ONE

# OVERVIEW OF CAGE FISH FARMING

## 1.0 Introduction

This chapter contains the background of the study as well as an overview of fish production in Ghana. It also contains the statement of the problem, the research questions and objectives, significance of the study, structure of the thesis, the research limitations and significance of the study.

## 1.1 Background of the study

Aquaculture is the farming of aquatic organisms such as fish, molluscs, crustaceans, aquatic plants crocodiles, alligators, turtles, and amphibians (FAO, 2012a), while cage fish farming involves the planned growth and cultivation of fish in cages on water bodies for harvesting as food. Together, capture fisheries and aquaculture supplied the world with about 148 million tonnes of fish in 2010 (with a total value of US$217.5 billion), of which about 128 million tonnes was utilised as food for people. Of the 126 million tonnes available for human consumption in 2009, fish consumption in Africa was lowest (9.1 million tonnes). Aquaculture, therefore, is set to remain one of the fastest-growing animal food-producing sectors and, in the next decade, total production from both capture and aquaculture will exceed that of beef, pork or poultry (FAO, 2012b). In many areas of sub-Saharan Africa and South Asia, their fish consumption levels remain too low and they are failing to benefit from the contributions that fisheries

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and aquaculture are increasingly making elsewhere in terms of sustainable food security and income (FAO, 2012b).

Protein malnutrition is also a concern in Africa and many developing countries including Ghana (GHS, 2005). Malnutrition affects all age groups, but it is especially common among the poor and those with inadequate access to health education, clean water and good sanitation. In a study by FAO (2012), it was discovered that protein-energy malnutrition (PEM) is the most lethal form of malnutrition globally. In Ghana, the situation is not different. It has b 1 observed that the most prevalent form of malnutrition is PEM, which causes growth retardation and underweight (GHS, 2005). About 54% of all deaths beyond early infancy were associated with PEM, making this the single greatest cause of child mortality in Ghana (GHS, 2005). Fish is an important source of animal protein in Ghana. Increased availability of fish can therefore reduce protein malnutrition in the country and ensure food security. Apart from its potential to contribute towards attaining food security, cage fish farming offers poverty alleviation through job creation. Cage fish farming has less harmful impact on the ecosystem, compared to the use of harmful and destructive methods such as explosives and pesticides by some fisher folk to catch fish from the wild.

## 1.2 Fish production in Ghana

Aquaculture was believed to have started in the northern parts of Ghana when the first fish ponds were built in 1953 by the former Department of Fisheries (BoG, 2008). These fish ponds were used to produce fingerlings to support the culture-based reservoir

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fishery development program of the colonial government. Fishing skills were taught in communities living near small reservoirs, which were not traditionally used for fishing. This project was not successful because of poor site selection, ponds not being drained and farmers not having any focus (Hiheglo, 2008). However, some farmers in the country started developing interest in fish farming and in the late 1990s, Tropo Farms and Crystal Lake Fish Ltd., among others, established cage fish farms on the Volta Lake. Later, over 60 cage aquaculture enterprises were established between 2000 and 2010 (Anane-Taabeah, 2012). Even though fish production from non-capture sources appears to be on the rise in recent years, it contributed less than 3% of Ghana's total fish supply between 2009 and 2011 (MoFA, 2013). It is necessary to note that the contribution of aquaculture to the national economy has not been disaggregated, so its importance is not fully recognised. Over the past decade, production of fish in the country from capture sources has generally been on the decline, while aquaculture production experienced slight annual growths since 2005 (Fig. 1.1). Cage fish farming has become a credible option for increasing fish production in Ghana to fill the huge production gap because production from both marine and inland sources appear to have reached their maximum potentials. The numerous fresh water bodies in Ghana, including the Volta Lake can be exploited to promote sustainable cage fish farming.

Aquaculture is usually carried out in ponds, pens and cages. Tilapia (*Oreochromis niloticus*) is the major species cultured and constitutes over 80 per cent of aquaculture production. Catfish (*Clarias gariepinus*) and African arowana (*heterotis niloticus*)

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account for the remaining 20 per cent (Hiheglo, 2008). The fisheries sector employs 10% of the population from both urban and rural areas and contributes to about 3% of the total GDP and 5% of GDP in agriculture (FAO, 2011). Opportunities for value addition such as fish processing, frying, salting and smoking exist and women form the key players in the industry.

The annual fish requirements for the country is 880,000 metric tonnes but only 400,000 metric tonnes are produced leaving a deficit of 480,000 metric tonnes. According to Simpson (2012), this deficit is due to the fact that fish farming is done mainly at subsistence level with a few commercial farms operating in the country. Consumption of fish is done predominantly by Ghanaian households, and food service sectors such as hotels, restaurants and institutions.

In spite of the benefits to be derived from cage fish farming, the sector is plagued with a few problems. Notable among them are inadequate supply of fingerlings, feed, credit, organised markets and weak extension support. These challenges need to be addressed in order to attain success and sustainability in the cage fish industry. The Youth in

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Aquaculture programme of the Government of Ghana is expected to bring more hope to cage fish farmers and provide solutions to some of these pertinent issues (MoFA, 2009).

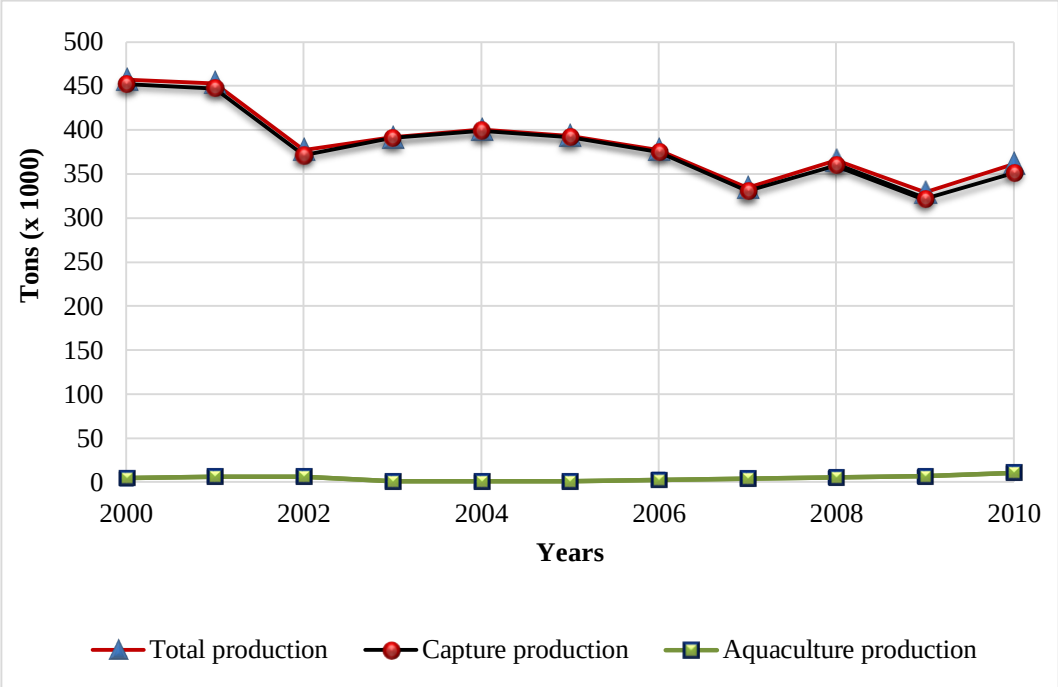


**Figure 1.1 Fish production in Ghana (2000-2010).**

Source: FAO Fishery Statistic, 2013.

## 1.3 Statement of the problem

In the past decade, there had been a rush by individuals and organisations to establish cage fish farms on the Volta Lake in the Asuogyaman and South Dayi districts. This was mainly due to the benefits to be derived from such enterprises. However, in spite of the large investments made, some of these enterprises failed and folded up after some few months of operation. These problems might arise due to demographic characteristics and

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competencies of the entrepreneurs, as well as characteristics of the cage fish farms, among others.

Demographic characteristics of entrepreneurs have been identified as influential factors that relate to the performance and success of an enterprise (Man et al., 2002; Rutherford and Oswald, 2000). For example, even though two different studies showed that the manager's level of education (as a demographic factor) is a significant determinant of the growth of enterprises, the strength of the relationships were not statistically significant, suggesting that the level of education does not actually matter in explaining the growth of small scale enterprises (Unger, Rauch, Frese & Rosenbusch, 2011). However, other authors have identified education and training as contributors to the growth and success of small enterprises (Simpson, Tuck & Bellamy, 2004; Kolstad & Wiig, 2004).

It is conjectured that competence of the entrepreneur can also contribute to the success of cage fish farming. This has been observed by some authors who indicated that competence of the entrepreneur is crucial to the success of the enterprise (Verhees & Meulenberg, 2004; Ahmad et al., 2011). Some of these competences were observed in innovativeness of the entrepreneur, positive attitudes and technical know-how. Such competencies of the entrepreneur may initially lead to competitive advantage of the enterprises which finally leads to growth.

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The characteristics of the enterprise itself could also have contributed to the failure and folding up of the cage fish farms in the two districts. There is empirical evidence that success of small businesses depends on the characteristics of the enterprise and the characteristics of the environment within which the enterprise operates (Rutherford and Oswald, 2000). While Bigsten and Gebreeysus (2007) found the existence of systematic relationships between firm growth and firm attributes, McMahon (2001) also theorised that enterprise size is significantly linked to better business performance; larger enterprises were found to have higher levels of success.

It is possible that the demographic characteristics, competences and enterprise characteristics, among others, could be responsible for either the success or failure of the cage fish farms in these two districts. So far, there no empirical evidence on such variables on cage fish production in Ghana and this has necessitated this research to unearth the factors responsible for the folding up of some of these farms, and how some are successfully operating.

### 1.4 Research questions

The major research question is, "what are the contributing factors to success or failure of cage fish farming in the Asuogyaman and South Dayi districts?" Specific research questions are:

i. Are there any relationships between demographic characteristics of entrepreneurs and success of cage fish farming?

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ii. Are there any relationships between competencies of entrepreneurs and success of cage fish farming?

iii. Are there any relationships between enterprise characteristics and success of cage fish farming?

## 1.5 Research objectives

The main objective of this study was to examine the factors that were responsible for failure or success of cage fish farming in the Asuogyaman and South Dayi districts. Specifically, the study had the following objectives:

i. To examine the relationship between demographic characteristics of entrepreneurs and success of cage fish farming.

ii. To examine the relationship between competencies of entrepreneurs and success of cage fish farming.

iii. To examine the relationship between enterprise characteristics and success of cage fish farming.

Objective one addressed research question one; objective two was pursued to address research question two, while objective three also addressed research question three.

## 1.6 Significance of the study

This study sought to fill the gap in our knowledge regarding factors that influence the success of cage fish farming. Findings from this study will present an enhanced understanding to cage fish entrepreneurs and business owners on how to address the

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factors that are likely to significantly influence the success of their businesses. Such understanding will help entrepreneurs to reduce the risk of failure and increase their chances of success and survival. The study will also assist to develop an understanding of the dynamics of cage fish enterprises not only for the development of support programmes and growth policies, but also for the growth of the Ghanaian economy as a whole. Such information would be critical in the development of appropriate policies for encouraging the development of cage fish farming sector, and increasing the impact of the sector in reduction of protein-energy malnutrition, poverty and overall development. The government of Ghana also needs a policy framework within which this sector can be synchronised. This study therefore scrutinised the factors that impacted either positively or negatively on the success of cage fish farming in the Asuogyaman and South Dayi districts.

## 1.7 Structure of the thesis

This study is organized in five chapters. Chapter 1 introduces the study. In Chapter 2, a conceptual framework of the study is developed, while the methodology of the research is presented in Chapter 3. Chapter 4 focuses on the descriptive and correlational analysis of the data. Finally, Chapter 5 presents a summary of the research, draws conclusions, make recommendations on some policy implications and also indicates areas for future research.

There is no generally accepted definition of small and medium-sized enterprises (SME). Every country has her own legal definition of an SME. For example, in Australia, an

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SME employs fewer than 15 employees (Taylor & Adair 1994). In Ghana, the NBSSI (2013) defines SMEs as those enterprises employing 29 or fewer workers. It also refers to micro enterprises as those that employ between 1-5 people with fixed assets not exceeding 10,000 USD excluding land and building. Small enterprises employ between 6 and 29 workers, or have fixed assets not exceeding 100,000 USD, excluding land and building.

Unlike the crops and livestock sectors in Ghana that have generally accepted definitions of small scale farms, in the cage fish sector, there is no clear cut definition of small scale cage fish farms. This is probably because the industry is now emerging within the agricultural sector. However, highly-placed sources at the Ministry of Fisheries and Aquaculture Development proposed that enterprises having ten cages or less could be classified as small. It is also worthy of note that in the Asuogyaman and South Dayi districts, a clear distinction can be made between the big cage fish enterprises that operate hundreds of cages with advanced technology, and the small ones that have just a few cages under production. The enterprises that were selected for this study fell in the latter category.

## 1.8 Limitations of the research

Many of the sampled respondents did not keep good records of their farm operations, and this made data collection a rather tedious job. Also, due to resource and time constraints, the study covered only small scale cage fish farms in the Asuogyaman and South Dayi districts.

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## 1.9 The study locations

The study was carried out in the Asuogyaman and South Dayi districts as shown in Figure 1.2.

### 1.9.1 The Asuogyaman District

The Asuogyaman District is one of the twenty-one districts in the Eastern Region of Ghana. It covers an estimated total surface area of 1,507 square kilometres, constituting 5.7 percent of the total area of the Eastern Region and is the 10th largest district in the Region (MoFA, 2014). It is located approximately between latitudes 6º 34º N and 6º 10º N and longitudes 0º 1º W and 0º14E. It is about 120m above Mean Sea Level (MSL) and has Atimpoku as its capital. It is bordered to the north by the Lower Manya Krobo Municipal, to the south and west by the Kwahu West Municipal, and to the east by the South Dayi, Ho Municipal and the North Tongu Districts.

The topography of the district is generally undulating. It is mountainous and interspersed with low lying plains to the west and the east. The Volta River cuts through the ridges to create a gorge where the Volta Dam at Akosombo was constructed, creating the largest man-made lake in the world. On the average, the highest of the peaks in the District ranges between 700 – 800m above sea level. The Lake is heavily braided at Atimpoku as it flows over the low lying areas of the District and begins to meander its way into the sea at Ada. The flow of the Volta through the undulating landscape of the District creates an extensive lakefront good for tourism development.

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The Asuogyaman District lies within the Dry Equatorial Climate Zone, which experiences substantial amount of precipitation. This is characterised by a double maxima rainy season, which reaches its peak period in May – July, and the minor season occurs in the period of September – November. Annual rainfall usually starts in April with the peak month in June and ends in November. The dry season sets in November – December and ends in March. The annual rainfall is between 67m and 1130mm; temperatures are warm throughout the year with maximum monthly mean of 37.2ºC and a minimum of 21.0ºC. Relative humidity is generally high ranging from the highest of 98% in June to 31% in January.

The vegetation is predominantly dry semi – deciduous forest and savannah woodland with regrowth. The natural bio-geophysical environment appears rather vulnerable to farming and other forms of environmental stress. Timber resources are negligible. Tree types that are found all over the district include palm, mango, silk cotton, neem and cassia. The main food crops grown in the district include cassava, maize, plantain and vegetables. Banana and pineapples and mango are also cultivated as cash crops.

### 1.9.2 The South Dayi District

The South Dayi District lies within latitudes 3.20°N and 3.505°N, and lies approximately on longitude 0.17°E. (Ghana Districts, 2014). It shares boundaries with North Dayi District and Hohoe Municipal to the north, Ho Municipal to the east and Asuogyaman District to the South, while the Volta Lake forms the Western boundary.

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The District covers a total area of approximately 1,000 square kilometres. The most conspicuous physical features of the South Dayi District are the Akwapim-Togo-Atakora ranges which forms the eastern boundary between South Dayi and Ho Districts, South of latitude 3o28N. Scattered over the district are hills and ridges which give the topography an undulating nature. Examples of these hills are at Tsatee, Akpato, Amekulotoe and Abanyakoe.

The vegetation of the District is a mix of Guinea savannah woodland and deciduous forest. The savannah woodlands consist of grass with scattered trees including baobab and acacia. The semi-deciduous forests are found on the slopes of the Akwapim-Togo-Attakora hills and parts of Tsate, To-Kpalime and Dzemeni areas. Much of the forests have however been lost due to lumbering, bad farming and bush burning practices. The major soil types in the district are the savannah ochrosols and ground water laterites. But along the Volta Lake, alluvial silty loam predominates. The soils in the district are of low organic matter, low fertility and low moisture holding capacity. There is widespread soil erosion at various parts of the district.

The climate of the district is tropical. It is greatly influenced by the south-west monsoons from the South Atlantic, and dry harmattan winds from the Sahara. There are two rainy seasons; the major rains start from mid-April to early July while the minor rains start from September and end in November. Over 50% of the total rain falls in the major season. The average annual rainfall varies from 900mm to 1,300mm. However, there are considerable variations in the onset, duration and intensity of the

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monthly rainfall. Generally, rainfall is inadequate even during the major season for reliable crop production. Crop failures due to poor minor season rains have often been experienced. The district is drained by the Volta Lake and River Dayi. Covering about 20% of the total surface area of the district, the Volta Lake runs virtually along the whole of the western boundary, and its basin provides a prime farming land suitable for the cultivation of various food and industrial crops. The Volta Lake provides a thriving fishing ground for communities along the lake. It also provides opportunity for fish farming and lake transport.

Cage fish farming is becoming a vibrant agricultural activity in these two districts because of their comparative advantage of having the unpolluted Volta Lake flowing through them. Majority of the cage fish enterprises in the Asuogyaman district are located south of the Akosombo dam, while in the South Dayi district, they are situated north of the dam. The Nile tilapia, *Oreochromis niloticus* and the African catfish *Clarias gariepinus* are the main fish species cultured in these districts. The closeness of the two districts to one another made them ideal for study in relation to the influence of entrepreneur and enterprise characteristics on success of cage fish farming.

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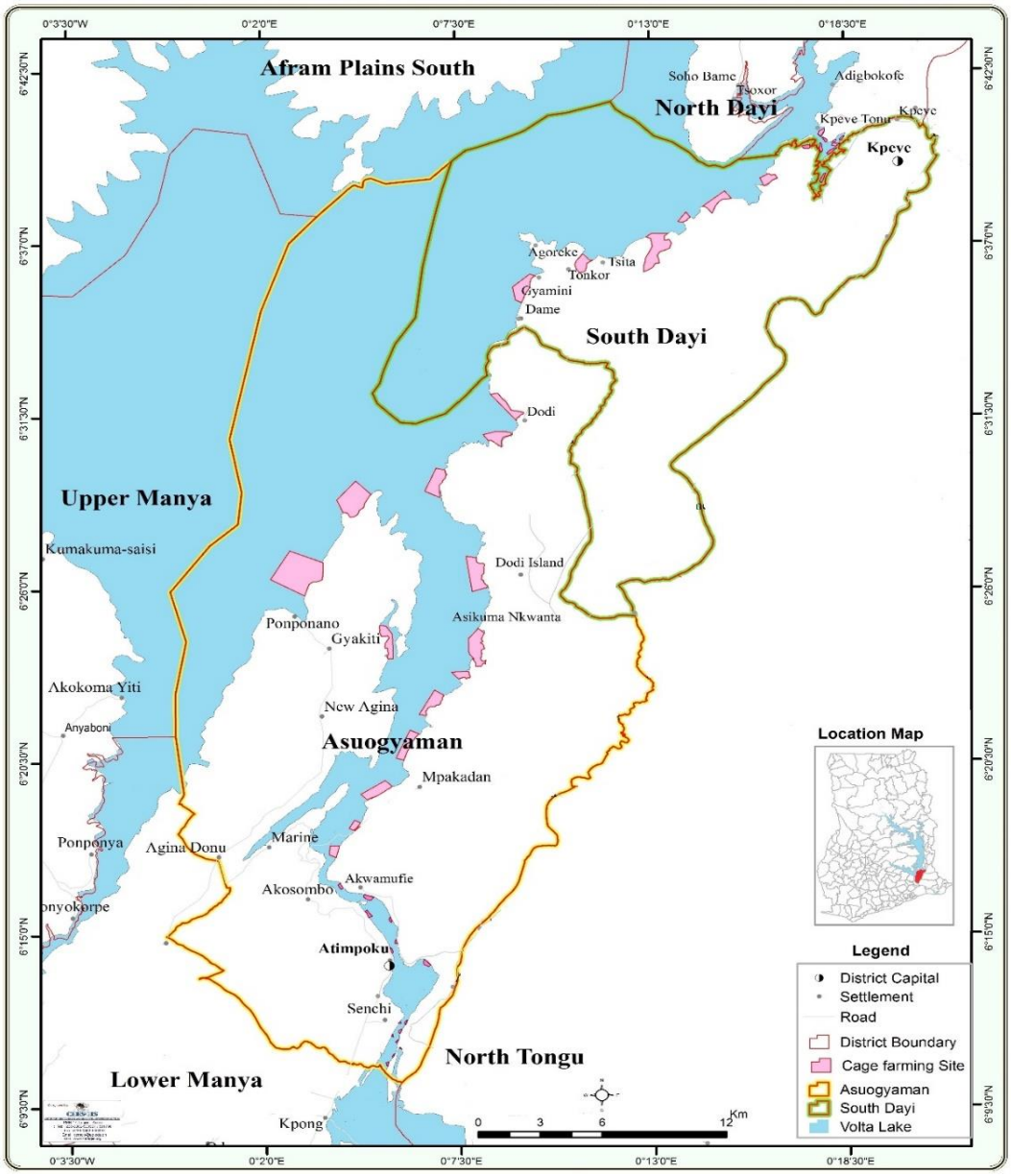


**Figure 1.2 Map of the study area showing cage fish farming enterprises**

Source: CERSGIS, 2014

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# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter contains a review of the relevant literature in the area of the relationship between entrepreneur and enterprise characteristics on one hand, and enterprise success on the other hand. For entrepreneur characteristics, the literature reviewed covered demographic characteristics (sex, age, family background, experience on the job as owner or manager and educational level), and competency (technical know-how, attitude, start-up experience, work experience and managerial skills). The enterprise characteristics looked at age, ownership type, location, sources of information and sources of finance. For enterprise success, literature covered profitability, growth in sales, growth in size of enterprise, growth in number of employees and customer satisfaction. Figure 2.1 is a diagrammatic representation of the relationship between the various variables.

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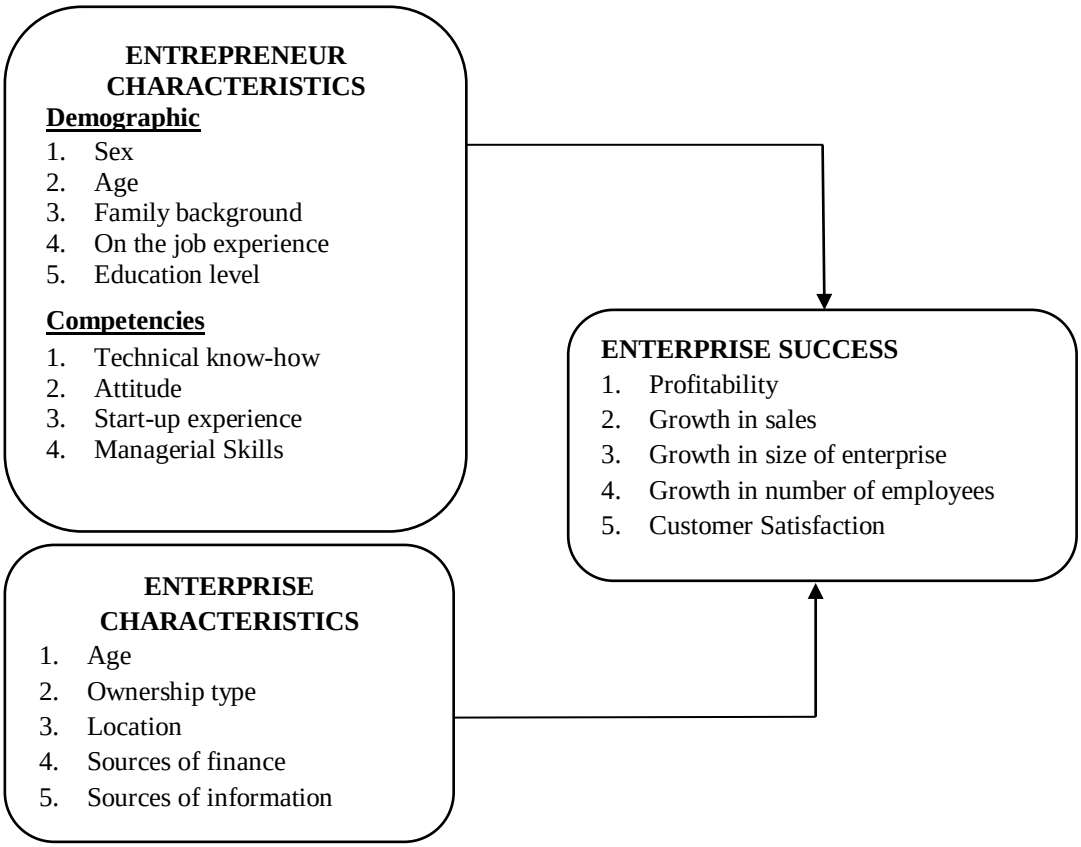


**Figure 2.1 The Conceptual Framework**

Sources: Chivukula, Raman, & Ramachandra (2009); Garoma (2012).

## 2.1 Enterprise success

By the simplest definition, success is equivalent to continued business operations and the opposite, failure, means going out of business (Simpson et al., 2004). Success, in general, relates to the achievement of goals and objectives in whatever sector of human life. In business life, success is a key term in the field of management, although it is not always explicitly stated (Islam, Khan, Obaidullah, and Alam, 2011). Success and failure

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can be interpreted as measures of good or indifferent management. Success or achievement is a persistent subject matter in individual life. Raduan, Naresh and Lim (2006) in their study to examine the relationship between venture growth on one side and personal initiative, human capital and government support programs on the other hand, found out that an entrepreneur's educational level and working experience had a positive relationship with success. The concept of enterprise success is defined in terms of financial performance, such as growth, profit, turnover or return on investment, or number of employees (Paige & Littrell, 2002; Simpson et al., 2004; Walker & Brown, 2004). Ahmad, Wilson and Kummerow (2011) adopted four dimensions of satisfaction with financial performance, satisfaction with non-financial performance, performance relative to competitors, and business growth to measure enterprise success.

### 2.1.1 Profitability

Profit is calculated as the difference between revenue and costs. Robb and Fairlie (2007) used profit and turnover as an indicator of success. According to Van Dijk (2005), there are difficulties in measuring profit by owners of small enterprises for several reasons. He stated that, as these businesses do not keep complete books of accounts, they would not be able to state the real financial values of their enterprises. Additionally, income from these businesses is usually used to support household consumption, hence calculating revenues from such enterprises becomes a complex issue. In spite of these difficulties, profit is the most commonly used measure of small enterprise success.

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### 2.1.2 Growth in sales

Growth in sales refers to the increase in sales over a specific period of time, often but not necessarily annually (Investorwords, 2013). Growth in sales for a particular period will not necessarily result in increased revenue, if the unit prices per quantity of produce become lower than that of the preceding period. Entrepreneurs should therefore be constantly on the lookout for better markets for their products. Von and Cusumano (2001) advised that as a part of its growth policy, irrespective of its size a firm should plan carefully for the sales growth for future. For a cage fish enterprise, this would include putting up the necessary infrastructure to accommodate expected increases in production. Chivukula et al. (2009) in their study on the influence of socio-demographic factors on entrepreneurial attributes suggested the use of growth in total sales as a financial measure of enterprise success. Growth in sales was calculated as:

Sales Growth Rate = (Current Year's sales - Last Year's sales) / (Last Year's sales) x100

### 2.1.3 Growth in size of enterprise

The operating environment influences small and large enterprises differently. Small businesses are faced with hostile competition from larger enterprises, if they all operate in the same industry and area (Baard & Van den Berg, 2004). This is because small businesses have limited resources which become their liability. With these constraints in mind, owners and managers of successful small enterprises aspire to expand their enterprise sizes so as to acquire comparative advantage. The study sought to find out if the growth in size of an enterprise was influenced by the characteristics of the

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entrepreneur and the enterprise itself. For the purposes of this study, the number of cages under production in a particular year was the determinant of enterprise size.

### 2.1.4 Growth in number of employees

As the size of an enterprise increases, there may be the need to recruit additional workers in order to ensure timely and effective discharge of operations (Chivukula et al., 2009). Delmar, Davidson and Gartner (2003) noted that before any substantial sales are made, start-up firms may grow significantly in employment and assets. By this reasoning, they posited that growth in employment and assets should also be considered as performance measures. However, measuring performance by growth in employment can be challenging though, since this measure can be affected by changes in productivity, replacement of employees with capital investments and outsourcing of activities. Therefore, an enterprise can grow significantly in its output without any increase in employment (Delmar et al, 2003).

### 2.1.5 Customer satisfaction

People in business know they need feedback from their customers in order to tailor their service delivery and product design to suit the needs and expectations of their customers. Customer satisfaction is a measure of how products and services supplied by an enterprise meet or exceed the expectations of the customer. It is seen as a key performance indicator within a business (Gitman & McDaniel, 2005). Measuring customer satisfaction can help a manager to reduce the number of unhappy customers, and thus maintaining or increasing the number of outlets for the products from the

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enterprise. According to Best (2009), dissatisfied customers may become "customer terrorists" who will like to compensate for their dissatisfaction with products of an enterprise by telling potential customers about their experiences, thus destroying the reputation of that enterprise.

## 2.2 Characteristics of the entrepreneurs

In this study, an entrepreneur is defined as the person who actually leads the firm, and is the respondent in empirical surveys and case studies. Thus, he or she may be a founder or a successor of the firm, and an owner-manager or a hired manager of the firm. The owner- manager's characteristics can act as a barrier or contributory factor to enterprise performance and growth. According to Naicker (2006), the personality, managerial skills and style including the entrepreneur's and/or management's negative attitude towards change can negatively influence an enterprise. The management functions of the entrepreneur have been identified as planning and goals setting, decision making, risk assessment and management, problem solving, self-confidence, communication, selling/persuasive skills, technical and mental ability, human relations skills, high achievement drive and creativity (Simpson et al., 2004).

### 2.2.1 Demographic characteristics of entrepreneurs

Man, Lau, and Chan (2002) asserted that the demographic characteristics of an entrepreneur were often identified as the most influential factors that relate to the performance and success of an enterprise. This study considered the sex, age, family

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background and educational levels of the entrepreneurs, and how these related to success of their cage fish enterprises.

***Sex of entrepreneurs and enterprise success***

The sex of an entrepreneur is said to affect the establishment and performance of an enterprise. In a study, Mazzarol, Volery, Doss and Thein (1999) found that males were usually more likely to be founders of new businesses than females. In a recent work, Garoma (2012) found out that female owned enterprises generally do not perform like those owned by males largely due to household responsibilities and other deterring social factors. In Ghana, males dominate the actual fishing and fish farming activities, while their female counterparts are more involved in fish processing and marketing activities.

***Age of entrepreneurs and enterprise success***

In a study on success factors of entrepreneurs of small and medium sized enterprises in Bangladesh, Chowdhury, Alam and Arif (2013) found out that the ages of entrepreneurs was negatively correlated to business success. Earlier on Reynolds, Hay, Bygrave, Camp and Autio (2000) established that individuals in the age group of 25 to 44 years were the most entrepreneurially active. Younger entrepreneurs have a higher growth ambition, and that growth ambition drives success. Also, younger entrepreneurs are energetic, determined and willing to test their abilities, hence they possess greater growth goals compared to older entrepreneurs. According to Rwigema and Venter (2004), starting an enterprise too early, the entrepreneur may have limited abilities

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because the period before the age of 22 years is given to training, education and work experience. Starting after the age of 45 years will also mean the lack of energy and resilience of youth that the business needs so much (Ucbasaran, Wright, & Westhead, 2003).

***Family background of entrepreneurs and enterprise success***

Sorensen and Chang (2006) identified family influence as playing very important role in decision-making of an entrepreneur. According to him, family business plays an important role in encouraging future business inclinations. Entrepreneurs with parents who owned a business is likely to have the opportunity to learn and attain skills, resources and motivation from the parents from an early age and also appreciate the requirements of being an entrepreneur to get them ready for what to expect in owning business ventures. It therefore stands to reason that the decisions made by an entrepreneur involved in a cage fish enterprise could be influenced by the ideas he or she might have imbibed from family members involved in similar enterprises.

***On the job experience and enterprise success***

The ability to learn from one's experience is one of the main factors influencing entrepreneurial performance. Staw (1991) suggested that owners and managers with vast experiences in managing business are more capable of finding ways to open new businesses compared to employees with different career pathways. People who do not have job experience have less competencies and may find it challenging to develop good business ideas (Rwigema & Venter, 2004). Andreas and Marcus (2009) also

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demonstrated positive relationship between sustainability and on the job experience. On the job experience can build reputations that will enable the owner or manager to secure resources and assets which can be employed to recognise and establish subsequent ventures (Guzman & Santos, 2001). After analysing the impact of training on enterprise performance, Dearden, Reed and Van Reenen (2000) found correlations between on the job experience and higher labour productivity across a number of sectors.

***Education level of entrepreneurs and enterprise success***

Education and the requisite skills are needed to operate micro and small enterprises. Cage fish farming is a highly specialised endeavour, and requires an amount of education on the part of the owner or manager to achieve success in the operations. Studies conducted by Meng and Liang (1996) showed that after entering the entrepreneurial world, persons with higher education levels were found to be more successful. This was confirmed by Simpson et al. (2004). This was largely because higher education provided them with knowledge and modern professional expertise. They therefore became more aware of the reality of the business world and were thus in a position to use their learning capability to manage business. Islam, Khan, Obaidullah and Alam (2011) demonstrated that persons with higher educational levels were more successful in their businesses. Also, a research work on street entrepreneurship done by Thapa, Thulaseedharan, Goswami, and Joshi (2008) revealed that the level of education of entrepreneurs had moderate positive relationship with profit from the business. More recently, Unger et al. (2011) also found an entrepreneur's educational level to be significantly associated with entrepreneurship performance.

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### 2.2.2 Competencies of entrepreneurs

Inyang and Enuoh (2009) defined entrepreneurial competencies as the cluster of related knowledge, attitudes, and skills which an entrepreneur must possess in order to produce outstanding performance and maximise profit in the business. Ahmad et al. (2011) also indicated that entrepreneurial competencies had influence on the success of SMEs in Malaysia. In this study, the competencies of entrepreneurs investigated were technical know-how, attitude start-up experience and managerial skills.

***Technical know-how and enterprise success***

Knowledge refers to skills and expertise a person acquires through experience or education. In order to achieve the most favourable result in a given situation, the manager of an enterprise has to acquire sufficient knowledge, skills and attitude in order to make the right choices as well as put them into action. According to the Business dictionary (2013), technical know-how is expert skill, information, or body of knowledge that imparts on an ability to cause a desired result, and is not readily available, and is outside the public domain. Management skills can be acquired and personal qualities have a strong influence on the management skills and competencies of the entrepreneur (Baum et al., 2001). A cage fish enterprise owner or manager who has good technical knowledge in that industry will be in a better position to combine scarce resources more efficiently to achieve the desired production goals than those having deficient knowledge in the industry. For a cage fish venture to be successful, the owners and managers must have practical technical knowledge in the

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selection and use of the right types of inputs such as fingerlings, feed, types of cage, and the correct harvesting procedures.

***Attitude towards work and enterprise success***

An attitude is a hypothetical construct that represents an individual's degree of like or dislike for something. An attitude can be defined as a positive or negative assessment of people, objects, event, activities, ideas, or just about anything in your environment (Zimbardo et al., 1999). Attitudes are judgments of an individual. Attitudinal competency is the ability to select, maintain or adapt one's best attitudes for the present. In a given situation, behaviour can be viewed as a function of the individual's attitude towards the situation. Thus the behaviour of the owner or manager of an enterprise would be greatly influenced by his or her attitude towards that enterprise. Wiklund, Patzelt and Shepherd (2007) contend that attitude as an entrepreneurial orientation influences success. Attitude is important for business success because it provides the foundation for human motivation and personal achievement (Pajares, 2002).

***Start-up experience and enterprise success***

Herron and Robinson (1993) found out that the start-up experience of the owner manager could predict the performance of their ventures and that their predictive ability varied across economic environments. When an owner manager has high start-up experience, his or her entrepreneurial quality will also be high. This is because that experience will have involved a process of learning that will help minimise their start-up inefficiencies. Also, their capacities to perform various tasks will be enhanced (Barreira,

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2004). Owners and managers with education and experiences before getting involved in new businesses are more capable of finding ways to activate business unlike others who did not have experience and education. Lee and Denslow (2005) posited that lack of experience is a major factor affecting entrepreneurial performance. Start-up experience in the same industry might be an important factor because entrepreneurs not only gain the skill and know-how but they may as well, have networks of customers and suppliers that could lead to success of their existing enterprises.

***Managerial skills and enterprise success***

No matter the types of goods or services offered, developing good business management skills is fundamental to the success of any company. It is important to have the proper plans and strategies in place in order to achieve overall customer satisfaction. A good manager must have the skills of negotiation, planning marketing, pricing, time management and communication. In a study of Dutch entrepreneurs, Dahl and Reichstein (2007) noted that managerial skills were important for business success. A clear connection between higher skills and higher productivity has been identified.

## 2.3 Enterprise characteristics

The characteristics of an enterprise have influence on how its goals and objectives can be achieved. Bigsten and Gebreeysus (2007) in their studies have revealed the existence of systematic relationships between firm growth and firm attributes. Street and Cameron (2007) posited that business success is determined by several factors, such as individual and organisational characteristics. The enterprise characteristics considered in this study

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were age, ownership type, size, location, sources of finance and sources of information of cage fish enterprises.

### 2.3.1 Age of enterprise and enterprise success

Studies have shown that the age of an enterprise is a factor that can affect its survival and growth. According to Amyx (2005), new enterprises faced a greater risk of survival compared to older ones, due to that fact that new enterprises do not have the experience, access, links and legitimacy, and these result in their limited access to external resources. Kristiansen, Furuholt and Wahid (2003) also discovered that the length of time a business has been in operation was significantly related to business success. Creditors, for example, are more willing to advance credit to older, tried and tested enterprises than to new ones. This view is also supported by Davila, Foster and Gupta (2003) who posited that new enterprises face greater risks of survival than older firms because new firms do not have the experience, access, contacts, experience and reputation, and therefore have limited access to external resources.

### 2.3.2 Ownership of enterprise and enterprise success

The ownership type of a business influences its success. A business may be inherited, established by oneself, or established as a partnership. Usually businesses formed as partnerships are more likely to attract funding from financial institutions than those owned by individuals. Family successions of an enterprise can have advantageous impact on its performance. According to Anderson and Reeb (2003), a family manager

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of an enterprise plays the role of a steward of that firm. Besides, family heirs have a long-term focus which unrelated chief executives lack (Cadbury, 2000).

### 2.3.3 Size of enterprise and enterprise success

Larger enterprises were found to have higher levels of success. An investigation by Papadogonas (2007) revealed that the profitability of a firm was influenced by its size. Lee (2009) studied the relationship between firm size and its profitability. Results showed that absolute firm size plays an important role in explaining profitability. According to Davila et al. (2003), being small correlates negatively with survival rates, and since small enterprises have limited resources, this becomes their key liability. McMahon (2001) also theorised that enterprise size is significantly linked to business performance; larger enterprises were found to have a higher levels of success. Therefore, the larger the firm, the more likely it is to be profitable.

### 2.3.4 Location of enterprise and enterprise success

The implications of geographical location of an enterprise on its success are enormous. Geographical location can affect access to resources like skilled labour, finance and transport and other relevant facilities. The orthodox regional development theory stresses that urban areas have favourable supply-side conditions for firm development (Vaessen & Keeble 1995). Enterprises located in urban areas typically have a relative ease of access to customers and the inputs that they would need to produce goods or services. On the other hand, North and Smallbone (2000) established that enterprises in remote rural areas were less active on various dimensions of innovation. This may be

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influenced by the fact that the financial and business service sectors of most rural areas are less developed than pertains in the urban areas.

### 2.3.5 Sources of finance and enterprise success

Small enterprise financing is one factor at the heart of any successful enterprise development. However well thought through the plans are, it is almost impossible to realise the dreams for establishing an enterprise without adequate financing. In Ghana, the sources of finance available for small enterprises are formal (the banks), semi-formal (credit unions, savings and loans groups, NGOs and microfinance institutions), and informal (Susu groups and money lenders). The Association of Ghana Industries (2013) in a report stated that lack of adequate access to credit was the leading factor affecting the growth of small businesses in Ghana's agricultural sector. This study sought to consider the various sources of finance available to small-scale cage fish enterprises, and to establish the extent to which they impact on the success of such enterprises. McMahon (2001) discovered that greater dependence upon external finance was associated with better business growth.

### 2.3.6 Sources of information and enterprise success

Access to adequate information by small scale enterprises is essential to enhance productivity and access to market. Adhiguru, Birthal, and Ganesh (2009) posited that farmers look out for various information sources to carry out their production and marketing tasks as well as deliver safe and quality products to their consumers. In the agricultural sector of Ghana, farmers depended mostly on officials of the agricultural

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extension services department of MoFA as their main source of information. However, Entsua-Mensah (2009) found out that farmers in Ghana now continue to rely more on the informal sources of information for their production, processing and marketing of products. More and more farmers are also becoming dependent on the use of ICTs especially the internet and mobile phones as their information sources. The source of information of an enterprise is important for its starting, survival and growth (Kristiansen et al., 2003).

## 2.4 Summary

This chapter reviewed the relevant literature in the area of the relationship between entrepreneur and enterprise characteristics on one hand, and enterprise success on the other hand. The literature reviewed on entrepreneur characteristics considered demographic characteristics (sex, age, family background and educational level), and competency (technical know-how, attitude, start-up experience, and managerial skills). The enterprise characteristics looked at were age, ownership type, location, sources of information and sources of finance. The reviewed literature on enterprise success covered profitability, growth in sales, growth in size of enterprise, growth in number of employees and customer satisfaction.

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# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter covers the methods and tools employed in data collection and analysis. These are the research design, the target population of the study, the units of analysis, the sampling method, the sample size, data collection instruments and procedures, measuring of the variables, methods of data analysis and presentation.

## 3.1 The research design

The descriptive-correlational survey research design was used for this study. Creswell (2004) defined correlation as a statistical test to establish relationships between two or more variables. The reason behind the choice of this method was that it enabled the researcher to describe the nature of the situation as it existed at the time of carrying out the survey. The correlational procedure also enabled the researcher to examine the extent of relationship that existed between the variables. Also, it enabled the researcher to know the relationship between the variables and also assess the direction and significance of the relationship. Quantitative data was collected using close ended and open ended questions during the survey. Such type of data allows for the variables to be described in the form of frequencies, averages, and other statistical calculations (Creswell, 2004).

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### 3.2 Target population

The target population for this study was made of the owner-managers (or entrepreneurs) of all the 114 small scale cage fish enterprises in the Asuogyaman and South Dayi Districts. According to data available at the Ministry of Food and Agriculture (MoFA), the Asuogyaman and South Dayi Districts currently have 69 and 45 small-scale cage fish enterprises respectively dotted along the banks of the Volta Lake (G. Afetorgbor, personal communication, March 2013).

### 3.3 Sampling

All the owners or managers of the small-scale cage fish enterprises were used because there were only sixty nine (69) small-scale cage fish farms in the Asuogyaman District and forty-five (45) in the South Dayi District. The total number of cage fish farms was therefore one hundred and thirteen (114). This information was made available by MoFA in both districts. In order to increase precision (Creswell, 2004), all the cage fish farmers were considered for the study. However, sixty-two (62) managers and/or owners of small scale cage fish enterprises were interviewed in the Asuogyaman district, while 43 owners and managers were also interviewed in the South Dayi District, making a total of 105 respondents. The number reduced because some of the managers lived outside these two districts and could not be reached during the study.

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### 3.4 The units of analysis

The unit of analysis is defined as the major entity or body that is being analysed in the study (Babbie, 2001). It is the 'what' or 'whom' that is being studied. The units of analysis for this study were owners and managers of small scale cage fish farms and their farms in the Asuogyaman and South Dayi districts.

### 3.5 The data collection instruments

Structured questionnaires containing close ended and open ended questions were the main instruments employed to collect data in the study. The open-ended questions were intended to encourage respondents to share as much information as possible in an unrestricted manner. The closed-ended questions, on the other hand, were questions that could be answered by simply checking a box or circling the proper response from a set of responses provided by the researcher. The questionnaire was divided into four parts. Questions in parts one and two were targeted to measure demographic characteristics and competencies of respondents respectively. Part three questions were posed to measure enterprise characteristics, while questions in part four were directed at measuring the variables of enterprise success. The questionnaires were pre-tested to ensure that the data collected was accurate and credible as indicated by Kazi and Khalid (2012).

### 3.6 Measurement of variables

Profitability, growth in sales, growth in size of enterprise and growth in number of employees were calculated from numeric data collected from respondents covering the

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number of years that their respective enterprises had been in operation. A five point Likert scale ranging from 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree was adopted to measure customer satisfaction. This is because Likert scales do not restrict the respondents to yes or no answers, but have the advantage of allowing for degrees of opinion, and even no opinion at all (McLeod, 2008). Only those owners and managers whose enterprises were at least two years old were included in the sample for the study. The demographic characteristics of cage fish entrepreneurs were sex, age, parental background, and education level. They were measured using open and close ended questions. The competencies of cage fish entrepreneurs (technical know-how, attitude, start-up experience and managerial skills) were measured using five point Likert scales ranging from 1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, and 5 = strongly agree. This was in view of the fact that Michalos, Creech, Swayze, Kahlke, Buckler and Rempel (2011) also used the Likert scale to measure knowledge, attitude and behaviour of students. The enterprise characteristics of age, ownership type, location, sources of information and sources of finance were determined using open and close ended questions. Table 3.1 explains the levels at which the variables were measured in this study.

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**Table 3.1 Levels of measurement of the variables**

| Variable | Levels of Measurement |
|---|---|
| **1. Enterprise success** | |
| Profitability | Scale |
| Growth in sales | Scale |
| Growth in size of enterprise | Scale |
| Growth in number of employees | Scale |
| Customer satisfaction | Scale |
| **2. Entrepreneur characteristics** | |
| ***Demographic*** | |
| Sex | Nominal |
| Age | Scale |
| Family background | Nominal |
| Education level | Ordinal |
| On the job experience | Scale |
| ***Competencies*** | |
| Technical know-how | Ordinal |
| Attitude | Ordinal |
| Start-up experience | Ordinal |
| Managerial skills | Ordinal |
| **3. Enterprise characteristics** | |
| Age | Scale |
| Ownership type | Nominal |
| Location | Nominal |
| Sources of finance | Nominal |
| Sources of information | Nominal |

Source: Field data (2013)

## 3.7 Data collection procedures

Two Agricultural Extension Agents (AEAs) from each of the two districts were trained to assist the researcher in administering the questionnaires. These AEAs were already experienced in data collection procedures as part of their professional duties. The questionnaires were administered personally by the AEAs and the researcher to all the

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owners and managers of the sampled enterprises in the two districts. A total of 105 respondents were interviewed.

### 3.8 Methods of data analysis and presentation

Data from the field were compiled, sorted, edited and coded to ensure the required quality, accuracy and completeness. It was then entered into the computer using the Microsoft Excel 2013 and Statistical Package for Social Sciences Statistics (SPSS) 20 software for analysis. Descriptive statistics were used to present results of the sample characteristics. Pearson correlation analysis was used to determine the degree of relationship between the success of cage fish enterprises and entrepreneur characteristics and also enterprise characteristics. Data were presented in the form of frequency and correlation tables, graphs and pie charts.

### 3.9 Summary

This chapter provided details of the methodology employed in this study. It described the research design, the target population of the study, the units of analysis, the sampling method, and the sample size. Also described were the data collection instruments used, how the variables were measured, the data collection procedures and the methods of data analysis and presentation.

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# CHAPTER FOUR

# RESULTS AND DISCUSSION

## 4.0 Introduction

This chapter analyses and discusses the data collected. It presents the results of the study in accordance with the research objectives. The first section of this chapter presents the results and discusses the characteristics of the respondents; the second section focuses on the enterprise characteristics while the last section presents the correlation results of entrepreneur characteristics, enterprise characteristics and enterprise success.

## 4.1 Entrepreneur characteristics

The characteristics of the entrepreneurs can influence the performance and success of the enterprise. In this study, the characteristics of the entrepreneurs presented were sex, age, involvement of close family members in the cage fish enterprise, the experience on the job as owner or manager of the enterprise and highest level of education. Other characteristics are technical know-how, attitude, start-up experience, work experience and managerial skills.

### 4.1.1 Sex of respondents

The pie chart below (Figure 4.1) shows the distribution of the respondents by sex. Almost all (98%) of the respondents were males.

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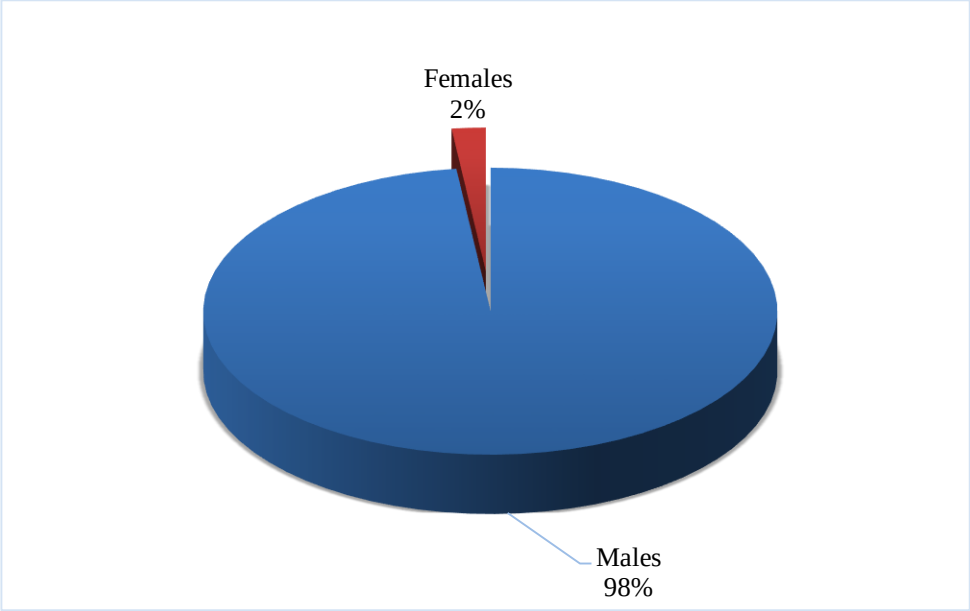


**Figure 4.1 Sex of respondents**

Source: Field data (2013)

### 4.1.2 Age of respondents

The bar chart below (Figure 4.2) represents the age distribution of the respondents in this study. It indicates that the largest number of the respondents (42.9%) fell within the 41-50 years age range, while the least number of respondents (2.9%) belonged to the 20-30 years age range. The 31-40 years age range had 13.3% of the respondents. Finally, about 41% of the respondents were 51 years old and above. According to the Ministry of Food and Agriculture (2013), the average age of farmers in Ghana is 55 years. It appeared as if there were relatively younger farmers in the cage fish industry.

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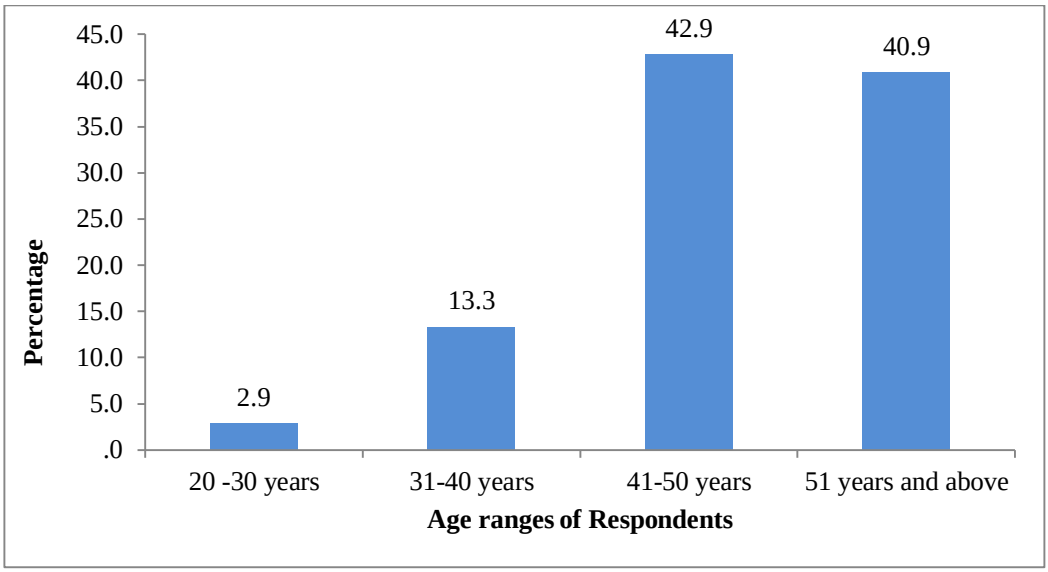


**Figure 4.2 Age ranges of respondents**

Source: Field data (2013)

### 4.1.3 Family background

From Figure 4.3, it was observed that more than half of the respondents (52%) did not have any close family member who owned or was involved in managing a cage fish enterprise. The rest of the respondents had close family members who owned cage fish farms. It is therefore probable that the decision of majority of respondents to get involved in cage fish production was not influenced by the fact that their close relatives were also involved in similar enterprises. It is also possible that whatever experiences and skills they had acquired before entering into cage fish farming were not acquired from family members.

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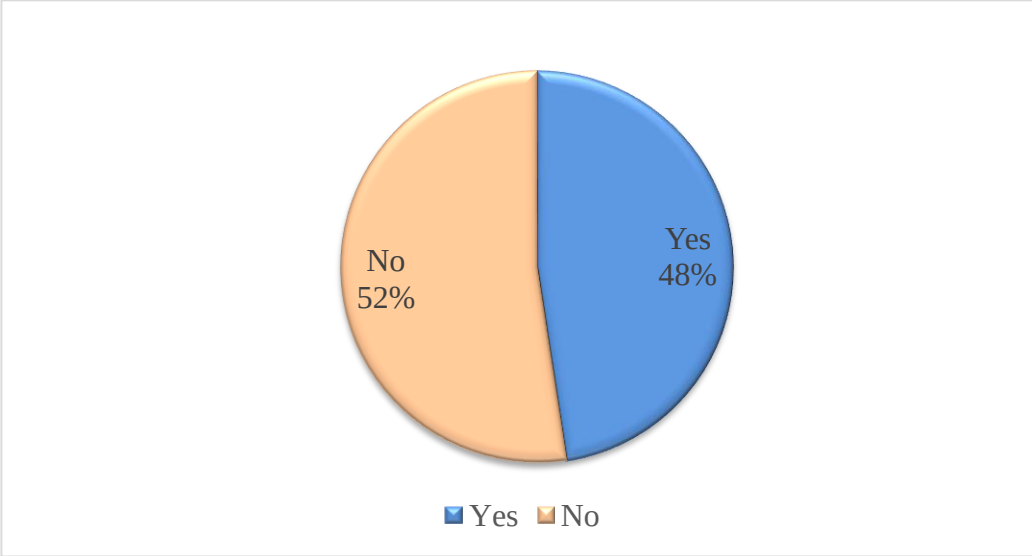


**Figure 4.3 Close family members owning cage fish enterprises**

Source: Field data (2013)

### 4.1.4 Level of education of respondents

The level of education attained by the respondents is shown in Table 4.1. Those respondents with Secondary/Technical education were in the majority (45.7%), followed by those with basic education (38.1%) and those having tertiary education (11.4%). Respondents without any formal education formed 4.8% of the total. This indicates that majority of the respondents had some form of formal education. This information will be helpful in designing any form of interventions like trainings and introduction of innovations that will be targeted at respondents in the study area in order to improve upon their efficiency in cage fish farming.

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**Table 4.1 Level of education of respondents**

| Educational level | Frequency | Percentage (%) |
|---|---|---|
| No formal education | 5 | 4.8 |
| Basic education | 40 | 38.1 |
| Secondary/Technical | 48 | 45.7 |
| Tertiary | 12 | 11.4 |
| Total | 105 | 100.0 |

Source: Field data (2013)

### 4.1.5 Positions of respondents in the enterprise

Figure 4.4 shows the positions of the respondents in their enterprises. Majority (47.6%) of them were managers while 41.9% of them were both owners and managers of the enterprises. Only 10% of respondents were owners of the enterprises. We can deduce that almost 60% of the respondents owned the cage fish enterprises themselves.

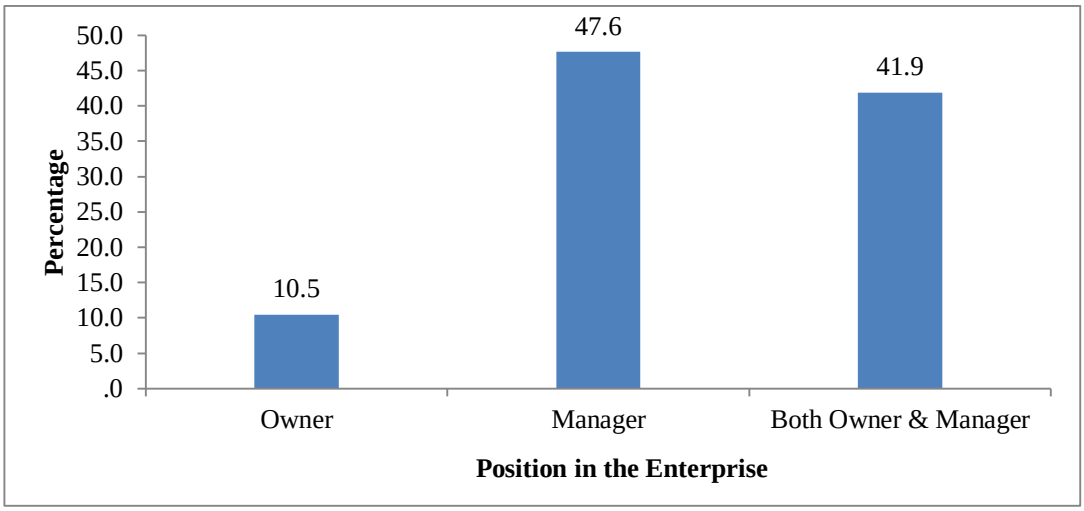


**Figure 4.4 Positions of respondents in the enterprise**

Source: Field data (2013)

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### 4.1.6 Experience on the job as owner or manager of the enterprise

The years of experience on the job as owners or managers of the enterprises is depicted in Table 4.2. Those who have been owners or managers for the past three years formed the biggest percentage of respondents (41.9%). It can be seen from the table that about 90% of the respondents were in their second to fourth years of being owners and managers of the cage fish enterprises. As was said earlier, this information will serve as a guide to policy makers and service providers in the types of interventions to make to sustain the industry in the study area.

**Table 4.2 Experience on the job as owner or manager of the enterprise**

| Years | Frequency | Percentage (%) |
|---|---|---|
| 2 | 23 | 21.9 |
| 3 | 44 | 41.9 |
| 4 | 29 | 27.6 |
| 5 | 5 | 4.8 |
| 6 | 1 | 1.0 |
| 7 | 2 | 1.9 |
| 8 | 1 | 1.0 |
| Total | **105** | **100.0** |

Source: Field data (2013)

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## 4.2 Competencies of respondents

The competencies of the respondents that were investigated were their technical know-how, attitude, start-up experience, work experience, and managerial skills.

### 4.2.1 Technical know-how

Table 4.3 presents the mean scores obtained from the respondents based on their responses to a set of questions to test their technical know-how on thematic areas of cage fish farming. The results demonstrated that the respondents agreed that they had much technical knowledge in fish feeding, record management, site selection and management, stocking and fingerlings management as well as cage management.

**Table 4.3 Technical know-how of fish farmers**

| Items | Mean |
|---|---|
| The total daily ration for fish should be divided over 2-3 feedings. | 4.36 |
| Dead fish found floating should be removed daily and recorded. | 4.25 |
| When selecting a site to place the cages, areas where the water is calm and stagnant should be avoided. | 4.06 |
| Cages should be anchored in at least 8-10 metres of water. | 4.06 |
| It is easier to monitor the response of fish to sinking feed than floating feed. | 1.84 |
| The sex of fingerlings is not a matter to consider when buying the fingerlings | 1.83 |
| Cages must not be harvested totally before they are re-stocked with fresh fingerlings. | 1.72 |

Mean score: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree.
Source: Field data (2013)

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### 4.2.2 Attitude

Table 4.4 shows the mean scores obtained when the attitudes of respondents concerning innovation, self-esteem, risk taking and achievement were measured. The attitude of the respondents towards innovation had the highest mean score (4.35). The respondents agreed that in order to become successful in business, an entrepreneur must spend some time every day developing new ways to do business. The attitude of respondents towards self-esteem had the second highest mean score of 4.18. They agreed that it was important to get along with the people they work with in order to succeed in business. The attitude of respondents towards risk taking had a mean score of 4.07, where they agreed that they were willing to take risks in their businesses in order to become successful. The attitude of respondents towards achievement had the least score of 3.03, where they were undecided on whether business success must be judged by concrete results.

**Table 4.4 Attitude of fish farmers**

| Items | Mean |
|---|---|
| Innovation | 4.35 |
| Self-esteem | 4.18 |
| Risk-taking | 4.07 |
| Achievement | 3.03 |

Mean score: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree.
Source: Field data (2013)

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### 4.2.3 Start-up experience

The table below shows the mean scores of the various items which were measured to find out if the respondents had any experience in cage fish farming prior to owning or managing their current enterprises. As is shown in Table 4.5, the respondents who had experience in cage fish farming before working in their current enterprises had the highest mean score of 3.49. Those who agreed to having had training in cage fish enterprise management prior to managing their current enterprises had a mean score of 3.30. The mean score of 2.95 was presented by those respondents who disagreed that they have not had technical training in cage fish farming before working on their current enterprises. This means that the respondents had a fair level of start-up experience before engaging in the cage fish enterprises. In practice, this must translate into good entrepreneurial performances.

**Table 4.5 Start-up experience of entrepreneurs**

| Items | Mean |
|---|---|
| I have had training in management before managing this enterprise. | 3.30 |
| I have not had technical training before managing this enterprise. | 2.95 |
| Before working in this enterprise, I already have experience in cage fish farming. | 3.49 |

Mean score: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree.
Source: Field data (2013)

### 4.2.4 Managerial skills

Data in Table 4.6 indicates that respondents agreed that they possessed the skills of communication, marketing, planning and organization, pricing, financial management

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and negotiation. Managerial skills were measured to determine the extent to which they related to enterprise success.

**Table 4.6 Managerial skills acquired by entrepreneurs**

| Items | Mean |
|---|---|
| Communication | 4.17 |
| Marketing | 4.09 |
| Planning and organization | 3.95 |
| Pricing | 3.90 |
| Financial management | 3.90 |
| Negotiation | 3.86 |
| Time management | 2.57 |

Mean score: 1 = Strongly Disagree, 2 = Disagree, 3 = Undecided, 4 = Agree, 5 = Strongly Agree.
Source: Field data (2013)

## 4.3 Enterprise Characteristics

In this study, the enterprise characteristics that were measured to determine their relationships with enterprise success were age, ownership type, location, sources of information and sources of finance.

### 4.3.1 Age of the enterprise

The largest number of cage fish enterprises in the districts (37.1%) was in their third year of formation (Figure 4.5). This shows that a sizeable number of the cage fish farms in the study area were in their start-up phases. This must inform the choice of the types of interventions that would be aimed at sustaining the industry. When put together, those

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enterprises which were established 4-12 years ago made up 45.8% of the total. Kristiansen et al. (2003) found that the length time an enterprise has been in operation was significantly correlated to business success.

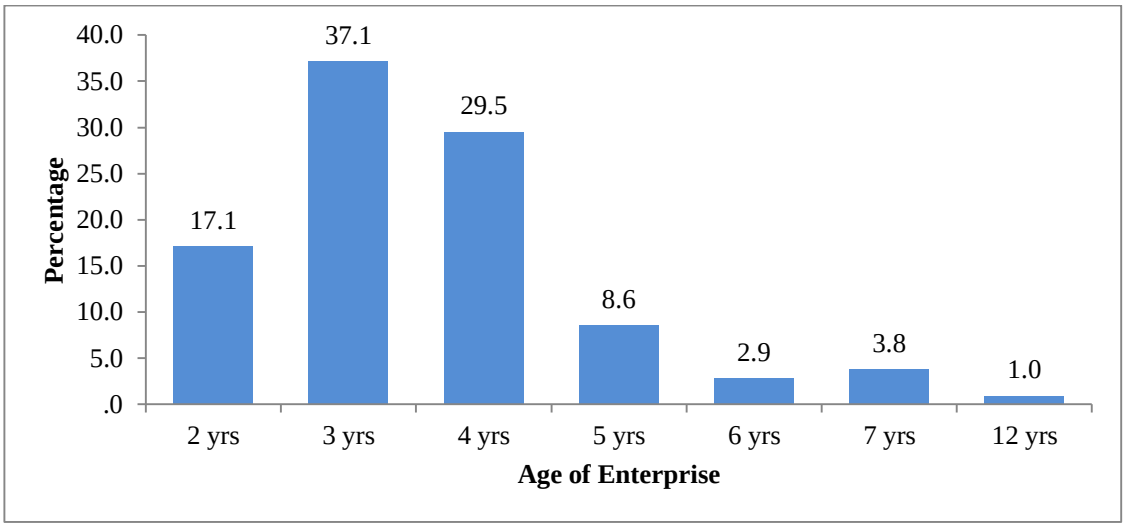


**Figure 4.5 Age of the enterprise**

Source: Field data (2013)

### 4.3.2 Types of ownership

Figure 4.6 provides information on the ownership types of the cage fish enterprises in the study area. Majority of the enterprises (50%) were established as partnerships while 47% were exclusively owned by individuals. Only 3% of the enterprises were inherited.

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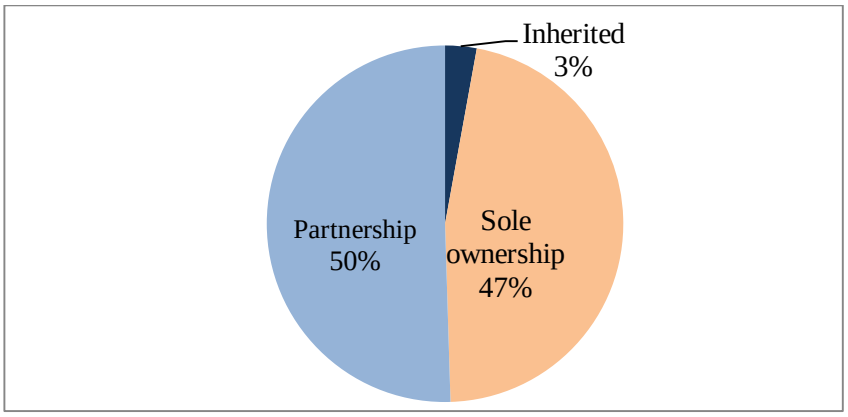


**Figure 4.6 Types of enterprise ownership**

Source: Field data (2013)

### 4.3.3 Number of fish cages at the beginning and currently

Table 4.7 shows the number of cages each enterprise had when it began to operate, and the number of cages currently in operation. It became clear that 48.6% of the enterprises began operations with two cages, while 41% began with only one cage. This implies that about 90% of cage fish enterprises in the study area started with one or two cages. The table also shows that currently, 36.2% of the enterprises were operating with three cages, while 20% of them had three cages in operation and 24.8% had four cages. It can be deduced that 81% of the cage fish enterprises in the study area currently operate with between two and four cages. This is in sharp contrast with the few large scale farms that operate hundreds of cages under production.

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**Table 4.7 Number of fish cages at the beginning and currently**

| Number of cages when the Enterprise began | | | Number of cages currently | | |
|---|---|---|---|---|---|
| **Number of Cages** | **Frequency** | **Percentage (%)** | **Number of Cages** | **Frequency** | **Percentage (%)** |
| 1 | 43 | 41.0 | 2 | 21 | 20.0 |
| 2 | 51 | 48.6 | 3 | 38 | 36.2 |
| 3 | 4 | 3.8 | 4 | 26 | 24.8 |
| 4 | 3 | 2.9 | 5 | 9 | 8.6 |
| 5 | 2 | 1.9 | 6 | 4 | 3.8 |
| 6 | 2 | 1.9 | 7 | 1 | 1.0 |
| Total | 105 | 100.0 | 8 | 6 | 5.7 |
| | | | Total | 105 | 100.0 |

Source: Field data (2013)

### 4.3.4 Influence of location of enterprise on success of operations

The views expressed by respondents about the influence of the location of their farms on success of operations are presented in Table 4.8. Majority (75.2%) of the respondents considered their current locations as having positive influence on success of their businesses. Only 26% of the respondents found their choices of locations to be negatively impacting on success of their operations. This meant that where their enterprises were sited was not good enough, and this was affecting their goals of achieving success in their operations. The reasons adduced by the respondents to explain the impact of the locations on their enterprises are stated in Table 4.9. It can be concluded that in selecting the locations for their enterprises, the respondents were careful to choose those sites that would lead to successful business outcomes. Foremost

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among the reasons presented by the respondents as positively affecting success of their businesses was that it was easy to bring inputs to the farms and also attract markets for their fish products. Those respondents who said the locations of their enterprises were negatively affecting their business outcomes mentioned poor water quality as the main cause.

**Table 4.8 Influence of enterprise location on success of operations**

| Response | Frequency | Percentage (%) |
|---|---|---|
| **Yes** | 79 | 75.2 |
| **No** | 26 | 24.8 |
| **Total** | 105 | 100.0 |

Source: Field data (2013)

**Table 4.9 Cross tabulation between enterprise location and their impact**

| **Explanation of impact** | **Location of enterprise impacting positively on the success of operations** | | **Total** |
|---|---|---|---|
| | **Yes** | **No** | |
| No conflict with local fishing folk | 4 | 0 | 4 |
| It is easy to bring inputs to the farm and also attract market | 63 | 0 | 63 |
| There is no theft case because security is good | 11 | 5 | 16 |
| Inputs are costly | 0 | 8 | 8 |
| Water quality is good | 11 | 9 | 20 |
| The road to the farm is good | 5 | 4 | 9 |
| Wind damage to cages is minimal | 13 | 1 | 14 |
| Location is ideal for future expansion | 1 | 0 | 1 |
| Labour is hard to come by | 0 | 7 | 7 |
| Proximity of farm to place of residence | 1 | 0 | 1 |
| Good working staff | 1 | 0 | 1 |
| Total | 110 | 34 | 144 |

Source: Field data (2013)

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### 4.3.5 Sources of enterprise finance

Table 4.10 portrays a picture of how funds were raised to start the enterprises. The highest source of start-up financing was personal savings (37.2%), followed by bank loan (31.4%), relatives (12.4%) and trade credit (1%). It was also discovered that majority of the respondents (80%) still had personal savings as their main source of finance after start-up. This was followed by loans from the banks (11.4%). It appeared that personal savings was the preferred choice of enterprise funding in the cage fish industry in the study area. It was observed that after start-up, the percentage of entrepreneurs that chose the banks as a source of funding reduced by more than half. This meant that, they had relied on other sources of funds to finance their operations.

**Table 4.10 Sources of enterprise finance**

| Source | Starting | | Current | |
|---|---|---|---|---|
| | Frequency | Percentage (%) | Frequency | Percentage (%) |
| Bank loan | 33 | 31.4 | 12 | 11.4 |
| Microfinance institutions | 6 | 5.7 | 2 | 1.9 |
| Personal Savings | 39 | 37.2 | 84 | 80.0 |
| Relatives | 13 | 12.4 | 2 | 1.9 |
| Friends | 12 | 11.4 | 3 | 2.9 |
| NGOs | 2 | 1.9 | 2 | 1.9 |
| Total | 105 | 100.0 | 105 | 100.0 |

Source: Field data (2013)

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### 4.3.6 Sources of enterprise information

Two different sources of information were considered, that of production information and market information (see Table 4.11). It is shown that 57.1% of the entrepreneurs said that their main source of production information were their colleague fish farmers, followed by Research institutes (16.2%) Most of the market information came mainly from colleague fish farmers (53.3%) and customers (37.1%) and the least market information (1%) was coming from the internet. In a study, Entsua-Mensah (2009) stated that farmers in Ghana continue to rely on the informal sources of information for their production, processing and marketing of products.

**Table 4.11 Main sources of information**

| | **Production information** | | **Market information** | |
|---|---|---|---|---|
| **Sources** | **Frequency** | **Percentage (%)** | **Frequency** | **Percentage (%)** |
| Radio | 2 | 1.9 | 4 | 3.8 |
| Television | 1 | 1.0 | 0 | 0 |
| Agricultural Extension Officers | 7 | 6.7 | 3 | 2.9 |
| The Internet | 2 | 1.9 | 1 | 1.0 |
| Colleague fish farmers | 60 | 57.1 | 56 | 53.3 |
| Research Institutes | 17 | 16.2 | 0 | 0 |
| Customers | 5 | 4.8 | 39 | 37.1 |
| Workshops | 7 | 6.7 | 0 | 0 |
| Bill boards | 4 | 3.8 | 2 | 1.9 |
| Total | 105 | 100.0 | 105 | 100.0 |

Source: Field data (2013)

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## 4.4 Correlation analyses

Correlation analyses were carried out to determine the

i. relationship between demographic characteristics of the cage fish farmers and success of their enterprises.
ii. relationship between the competence of cage fish farmers and enterprise success.
iii. relationship between characteristics of the enterprises and enterprise success.

### 4.4.1 Objective 1: Relationship between demographic characteristics of farmers and enterprise success

The demographic characteristics considered in this analysis were age of respondents, highest level of education and the number of years on the job as the manager or owner of the cage fish enterprise. Success of the cage fish enterprises was measured by profitability, growth in sales, growth in size of enterprise, growth in number of employees and customer satisfaction.

***Age of respondents and enterprise success***

The findings from the correlation analysis between customer satisfaction and the age of entrepreneurs showed a correlation coefficient of 0.279 (Table 4.12). This was a weak but significant positive relationship ($r = 0.279$, $p = 0.004 < 0.05$), and implies that the more the cage fish farmers or entrepreneurs got older, the higher the satisfaction they gave to their clients or customers. This finding is at variance with that of that of Reynolds (2000) that younger entrepreneurs have a higher growth ambition, which also

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drives success. In Bangladesh, Chowdhury, Alam and Arif (2013) found out that the ages of entrepreneurs was negatively correlated to business success. Other enterprise success factors such as profitability, growth in sales and growth in size of enterprise recorded positive but insignificant correlation with the ages of respondents. Also, growth in number of employees displayed an insignificant positive relationship with age of the entrepreneur.

**Table 4.12 Correlation between age of entrepreneurs and enterprise success**

| Variables | Age of respondents | |
|---|---|---|
| Profitability | Pearson Correlation | 0.009 |
| | Sig. (2-tailed) | 0.925 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.158 |
| | Sig. (2-tailed) | 0.108 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.075 |
| | Sig. (2-tailed) | 0.449 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.188 |
| | Sig. (2-tailed) | 0.055 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.279* |
| | Sig. (2-tailed) | 0.004 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2013)

***On the job experience and enterprise success***

As shown in Table 4.13, Correlation results showed a weak but significant positive relationship between on the job experience of the entrepreneurs and growth in sales ($r$ =

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0.189, $p = 0.04 < 0.05$). Lee and Denslow (2005) also identified a positive relationship between the number of years of experience on the job and entrepreneurial success. Similarly, Andreas and Marcus (2009) demonstrated positive relationship between sustainability and on the job experience. On the other hand, profitability, growth in number of employees, growth in size of enterprise and customer satisfaction all showed no significant but positive relationship with the number of years spent as owner or manager of the enterprise.

**Table 4.13 Correlation between on the job experience and enterprise success**

| Variables | Experience on the job as an owner or manager | |
|---|---|---|
| Profitability | Pearson Correlation | 0.163 |
| | Sig. (2-tailed) | 0.096 |
| | N | 105 |
| Growth in sales | Pearson Correlation | 0.189* |
| | Sig. (2-tailed) | 0.040 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.120 |
| | Sig. (2-tailed) | 0.224 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.056 |
| | Sig. (2-tailed) | 0.570 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.084 |
| | Sig. (2-tailed) | 0.393 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2013)

***Educational level of respondents and enterprise success***

In Table 4.14, the educational levels of the cage fish farmers had positive but insignificant relationship with various factors of enterprise success as the *p*-values for

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profitability, growth in sales, growth in size of enterprise, growth in number of employees and customer satisfaction were 0.090, 0.322, 0.934, 0.120 and 0.652 respectively ($p > 0.05$). Therefore, a higher educational level of a cage fish entrepreneur will not necessarily result in higher enterprise success. However, Islam, Khan, Obaidullah and Alam (2011) observed that persons with higher educational levels were more successful in their businesses. Thapa, Thulaseedharan, Goswami, and Joshi (2008) also observed that the level of education of entrepreneurs had moderate positive relationship with profit from the business. Similarly, Unger et al. (2011) also found an entrepreneur's educational level to be significantly associated with entrepreneurship performance.

**Table 4.14 Correlation between educational level and enterprise success**

| **Variables** | **Highest educational level** | |
|---|---|---|
| Profitability | Pearson Correlation | 0.166 |
| | Sig. (2-tailed) | 0.090 |
| | N | 105 |
| Growth in sales | Pearson Correlation | 0.098 |
| | Sig. (2-tailed) | 0.322 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.008 |
| | Sig. (2-tailed) | 0.934 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.153 |
| | Sig. (2-tailed) | 0.120 |
| | N | 104 |
| Customer satisfaction | Pearson Correlation | 0.044 |
| | Sig. (2-tailed) | 0.652 |
| | N | 105 |

Source: Field data (2013)

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### 4.4.2 Objective 2: Relationship between competence and enterprise success

The research considered five (5) different competence indicators namely technical know-how of the entrepreneurs, their attitude, start-up experience and managerial skills they have acquired over the years to determine if there were significant relationships between these variables and enterprise success.

***Technical know-how and enterprise success***

The findings on the correlation analysis showed a weak but significant positive relationship between technical know-how of farmers and the profitability of their enterprises ($r$ = 0.240, $p$ = 0.014 < 0.05). This finding points to the fact that as the technical know-how of a farmer or entrepreneur increases, the higher the profit the business makes (see Table 4.15). Growth in the number of employees also recorded a weak but significant positive relationship with technical know-how ($r$ = 0.231, $p$ = 0.018 < 0.05). This means that the more the entrepreneurs increased in their technical know-how, the more the number of employees they engaged in their cage fish enterprises. In a research, Hormiga, Batista-Canino and Sanchez-Medina (2010) found out that the greater the technical knowledge of the entrepreneur, the greater the possibility of the venture being successful in its first years of life. In addition, customer satisfaction displayed a weak positive relationship with the technical know-how of the

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cage fish farmers. This suggests that the higher the technical know-how of entrepreneurs, the higher customer satisfaction given to their respective clients. Growth in sales and growth in size of enterprise recorded positive but insignificant relationships with technical know-how.

**Table 4.15 Correlation between technical know-how and enterprise success**

| Variables | Technical know-how | |
|---|---|---|
| Profitability | Pearson Correlation | 0.240* |
| | Sig. (2-tailed) | 0.014 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.128 |
| | Sig. (2-tailed) | 0.193 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.187 |
| | Sig. (2-tailed) | 0.056 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.231* |
| | Sig. (2-tailed) | 0.018 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.229* |
| | Sig. (2-tailed) | 0.019 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).
Source: Field data (2013)

***Attitude of the respondents and enterprise success***

It can be seen from Table 4.16 that the attitude of entrepreneurs towards work displayed a weak but significant positive relationship with growth in sales ($r$ = 0.242, $p$= 0.013 < 0.05). The result implies that as the entrepreneurs developed positive attitudes towards their work, there is the likelihood of positive growth in the sales of their fishes, and

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confirms the findings of Zimbardo et al. (1999) which says that attitude can have a positive impact on people, objects, events, activities, ideas, or just about anything in one's environment. The finding also agrees with that of Wiklund, Patzelt and Shepherd (2007) who contended that attitude as an entrepreneurial orientation influences success.

**Table 4.16 Correlation between attitude towards work and enterprise success**

| Variables | Attitude | |
|---|---|---|
| Profitability | Pearson Correlation | 0.041 |
| | Sig. (2-tailed) | 0.677 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.242* |
| | Sig. (2-tailed) | 0.013 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.117 |
| | Sig. (2-tailed) | 0.234 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.050 |
| | Sig. (2-tailed) | 0.613 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.012 |
| | Sig. (2-tailed) | 0.902 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2013)

***Start-up experience and enterprise success***

It was observed that start-up experience of entrepreneurs had a weak but significant positive relationship with profitability ($r = 0.239$, $p = 0.014 < 0.05$). This means that the more start-up experience an entrepreneur had, the more profitable the business was likely to be. Start-up experience of entrepreneurs also registered a weak but significant

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positive relationship with customer satisfaction ($r$ = 0.233, $p$ = 0.017 < 0.05). This means that customers got more satisfaction from the services of entrepreneurs who had more start-up experience. Baptista and Karaoz (2006), as well as Raduan et al. (2006) also observed positive relationships between previous experience of entrepreneurs and success of their ventures. No significant relationship was observed between start-up experience and growth in sales, growth in size of enterprise and growth in the number of employees.

**Table 4.17 Correlation between start-up experience and enterprise success**

| **Variables** | **Start-up experience** | |
|---|---|---|
| Profitability | Pearson Correlation | 0.239* |
| | Sig. (2-tailed) | 0.014 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.035 |
| | Sig. (2-tailed) | 0.720 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.090 |
| | Sig. (2-tailed) | 0.361 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.081 |
| | Sig. (2-tailed) | 0.412 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.233* |
| | Sig. (2-tailed) | 0.017 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2013)

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***Managerial skills and enterprise success***

Managerial skills possessed by the entrepreneurs showed weak but significant positive relationships with profitability ($r$ = 0.383, $p$ = 0.000 < 0.05), growth in number of employees ($r$ = 0.265, $p$ = 0.007 < 0.05) and customer satisfaction ($r$ = 0.363, $p$ = 0.000 < 0.05). This finding supports that of Mohammed and Obeleagu-Nzelibe (2014), who also found significant relationships between entrepreneurial skills and success of selected SMEs in Nigeria. It also supports findings by Dahl and Reichstein (2007), who noted that managerial skills were important for business success. Managerial skills showed no significant relationships with growth in sales and growth in size of enterprise.

**Table 4.18 Correlation between managerial skills and enterprise success**

| **Variables** | **Managerial skills** | |
|---|---|---|
| Profitability | Pearson Correlation | 0.383* |
| | Sig. (2-tailed) | 0.000 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.049 |
| | Sig. (2-tailed) | 0.619 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.045 |
| | Sig. (2-tailed) | 0.647 |
| | N | 105 |
| Growth in number of employees | Pearson Correlation | 0.265* |
| | Sig. (2-tailed) | 0.007 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.363* |
| | Sig. (2-tailed) | 0.000 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).
Source: Field data (2013)

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### 4.4.3 Objective 3: Relationship between enterprise characteristics and enterprise success

***Enterprise age and enterprise success***

The final objective of this research was to examine the relationship between enterprise characteristics and success of cage fish enterprises in the Asuogyaman and South Dayi Districts of Ghana. The research correlated age as the main enterprise characteristic with the five enterprise success factors to determine if there were significant relationships between them.

**Table 4.19 Correlation between enterprise age and enterprise success**

| **Variables** | **Age of enterprise** | |
|---|---|---|
| Profitability | Pearson Correlation | 0.118 |
| | Sig. (2-tailed) | 0.230 |
| | N | 105 |
| Growth in Sales | Pearson Correlation | 0.293* |
| | Sig. (2-tailed) | 0.002 |
| | N | 105 |
| Growth in size of enterprise | Pearson Correlation | 0.159 |
| | Sig. (2-tailed) | 0.105 |
| | N | 105 |
| Growth in number of Employees | Pearson Correlation | 0.008 |
| | Sig. (2-tailed) | 0.933 |
| | N | 104 |
| Customer Satisfaction | Pearson Correlation | 0.058 |
| | Sig. (2-tailed) | 0.554 |
| | N | 105 |

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2013)

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The only significant correlation was the relationship between the age of the cage fish enterprises and growth in sales ($r$ = 0.293, $p$ = 0.002 < 0.05). The older an enterprise was, the greater the growth it experienced in sales (see Table 4.19). This finding reinforces that of Kristiansen et al. (2003) who also discovered that the length of time a business had been in operation was significantly related to business success. An explanation to this could be the long term contacts established by entrepreneurs with clients. Also, age of enterprise recorded positive but non-significant relationships with the rest of the success factors.

### 4.5 Summary

Among the demographic characteristics studied, age of cage fish farmers had a significant relationship with customer satisfaction indicating that customers got more satisfaction from older farmers. Generally, entrepreneurs use their years of experience to impress upon their interaction with customers. There was no significant relationship between educational levels of the entrepreneurs and success of the enterprises, implying that the educational attainments did not impact on success of enterprises and this may be due to the fact that the respondents with lower educational status are more than those with higher education. The experience of the cage fish farmer was found to have a significant relationship with growth in sales of the enterprises. Clearly, this implied that longer years at ones position would definitely lead to higher sales of fish.

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# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

This research was carried out with a broad objective to evaluate the influence of entrepreneur and enterprise characteristics on success of cage fish farming in the Asuogyaman and South Dayi districts in Ghana. The research adopted descriptive-correlational survey design and empirical research involved the use of quantitative research methods, with structured questionnaires as the instrument. Data were collected from 105 owners and managers of cage fish farms and their farms in the Asuogyaman and South Dayi districts as the units of analysis. Presentations were made on the background of the study, the problem statement, review of the relevant literature and theoretical foundations on which the research concept was developed. Also presented were the methodology employed for the study, results of the statistical analysis used to test the strengths of relationships between the variables and a discussion of the statistical results. Finally, a summary of major findings, key conclusions, and recommendations were presented.

The main objective of this study was to determine if there were significant relationships between entrepreneur characteristics, enterprise characteristics and success of cage fish enterprises across the Asuogyaman and South Dayi Districts of Ghana. Data were collected on entrepreneur characteristics (demographic and competencies), enterprise characteristics and enterprise success.

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## 5.1 Demographic characteristics of respondents

Objective one was to examine the relationship between demographic characteristics of entrepreneurs and success of cage fish farming in the Asuogyaman and South Dayi districts. It was observed that majority of respondents (98%) of respondents were males with most of them (84%) 41 years old and above. More than half of the entrepreneurs (52%) did not at any time in their lives have close members of their families owning or involved in managing cage fish enterprises, while 48% of them actually had close relatives in the cage fish business prior to their getting involved in the business. About ninety-five percent (95%) of them had formal education ranging from basic to tertiary education, with Secondary/Technical being the most predominant. Only about 5% of them did not have any formal education. The entrepreneurs who were solely managers were in the majority (47.6%), whereas 41.9% of them were both owners and managers, while 10% were only owners of the fish enterprises. About 90% of them were in their second to fourth years of being owners and managers. Correlation analyses revealed a significant positive relationship between the ages of entrepreneurs and the customer satisfaction they gave to their clients ($r$ = 0.004). The ages of entrepreneurs recorded insignificant but positive correlation with the other enterprise success variables of profitability, growth in sales and growth in size of enterprise. The significant values (p-values) for profitability, growth in sales, growth in size of enterprise, growth in number of employees and customer satisfaction were 0.090, 0.322, 0.934, 0.120 and 0.652 respectively; all these were not significant ($p$ > 0.05). Educational level of an entrepreneur had insignificant relationship with enterprise success. The on the job experience of the cage fish farmers recorded a positive significant relationship with

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growth in sales of the enterprises ($r$ = 0.189, $p$ = 0.04 < 0.05). However, the on the job experience of the entrepreneurs had positive but insignificant relationships with profitability, growth in number of employees, growth in size of enterprise and customer satisfaction.

## 5.2 Competencies of respondents

Objective two was to examine the relationship between competencies of entrepreneurs and success of cage fish farming in the Asuogyaman and South Dayi districts. Concerning technical know-how, results showed that the respondents had much technical knowledge in fish feeding (mean score = 4.36), records management (mean score = 4.25), site selection and management (mean score = 4.06) and cage management (mean score = 4.06). Entrepreneur attitude measured were innovation, self-esteem, risk taking and achievement. The attitude of the respondents towards innovation had the highest mean score (4.35), the attitude of respondents towards self-esteem had the second highest mean score of 4.18, risk taking had a mean score of 4.07 and achievement had the least mean score of 3.03. The entrepreneurs who had some experience in cage fish farming prior to working in their current enterprises were in the majority (mean score = 3.49), followed by those who had some experience in cage fish management (mean score = 3.30). Entrepreneurs who had technical training on the job were in the majority (mean score = 3.67), followed by those who had training in management (mean score = 3.52). Entrepreneurs possessed the managerial skills of communication, pricing, financial management, marketing, planning, organization and negotiation. There was significant positive relationships between technical know-how of

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the cage fish farmers and profitability of their enterprises, growth in the number of employees and customer satisfaction with Pearson correlation coefficients of 0.240, 0.231 and 0.229 respectively. All these relationships were significant at 5% level ($p < 0.05$). However, technical know-how showed positive but insignificant relationships growth in sales and growth in size of enterprise. Attitude of entrepreneurs recorded a positive significant relationship with growth in sales of the enterprises ($r = 0.242$, $p < 0.05$), but showed positive but insignificant relationships with the other enterprise success variables. Start-up experience of the entrepreneurs recorded significant positive relationships with profitability of the enterprises ($r = 0.239$, $p < 0.05$) and customer satisfaction ($r = 0.233$, $p < 0.05$) and showed positive but insignificant relationships with the other enterprise success variables. Managerial skills of entrepreneurs recorded significant positive correlations with profitability ($r = 0.383$, $p < 0.05$), growth in number of employees ($r = 0.265$, $p < 0.05$) and customer satisfaction ($r = 0.363$, $p < 0.05$) but displayed no significant relationships with growth in sales and growth in size of enterprise.

## 5.3 Enterprise characteristics

Objective three was to examine the relationship between enterprise characteristics and success of cage fish farming in the Asuogyaman and South Dayi districts. The ages of the enterprises in the study ranged from 2 years to a maximum of 12 years, about 83.7% of the enterprises were within their early years (2-4 years). Majority of the enterprises (37.1%) were in their third year of formation. Half of the enterprises were owned as partnerships; forty-seven per cent were owned by individuals and 3% were inherited

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from relatives. The study revealed that at the start-up of their enterprises, farmers had between 1-6 cages, with one and two cages making up approximately 90% of the enterprises. Currently, about 81% of the entrepreneurs operate about 2-8 cages, showing an improvement on size of enterprise. The largest source of finance for enterprise start-up were personal savings (37.2%), followed by bank loans (31.4%), relatives (12.4%) and trade credit (1%). It was also discovered that majority of the respondents (80%) still had personal savings as their current main source of finance. About 57% of the entrepreneurs had their colleague fish farmers as their main source of production information, followed by research institutes (16.2%); the other sources of information discovered were radio, television, agricultural extension officers, the internet, customers, workshops and bill boards. Market information also came mainly from colleague fish farmers (53.3%) and customers (37.1%) with the least (1%) being the internet. Correlation analysis displayed a significant positive relationship between age of the cage fish enterprises and growth in sales ($r = 0.293$, $p = 0.002 < 0.05$) but showed positive but insignificant relationships with the other enterprise success variables.

## 5.4 Conclusions

Among the demographic characteristics studied, age of cage fish farmers had a significant relationship with customer satisfaction indicating that customers got more satisfaction from older farmers. Generally, entrepreneurs use their years of experience to impose upon their interaction with customers. There was no significant relationship between educational levels of the entrepreneurs and success of the enterprises, implying that the educational attainments did not impact on success of enterprises and this may be

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due to the fact that the respondents with lower educational status are more than those with higher education. The experience of the cage fish farmer was found to have a significant relationship with growth in sales of the enterprises. Clearly, this implied that longer years at ones position would definitely lead to higher sales of fish.

On competence factors of the cage fish farmer, technical know-how had a significant relationship with profitability of their enterprise, growth in the number of employees and customer satisfaction. Thus, as the technical know-how of the farmer increases there is the likelihood that profitability will increase, number of employees will correspondently increase and therefore customers of the various farmers will be more satisfied with the operations of the farm. The attitude of the farmers towards cage fish farming and their customers recorded a positive significant relationship with growth in sales of the enterprises, implying that better attitudes of a farmer could lead to higher sales of fish. According to the findings, managerial skills of the entrepreneurs showed significant relationships with profitability, growth in the size of enterprise and customer satisfaction. This means that as the managerial skills of the entrepreneur increases he will be able to make more profits as the business grows in size and thus the customers will also derive more satisfaction from such an entrepreneur.

Age as an enterprise characteristic showed a significant relationship with growth in sales, implying that older enterprises over time turn to benefit from higher sales in the cage fish industry. Even though there are other enterprise characteristics, only age of the

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enterprise was correlated against the enterprise success variables because the rest were nominal variables.

## 5.5 Recommendations

In view of the findings from the study, the following suggestions can help enhance the success of the fish enterprises:

i. Most of the enterprises were started from the personal savings of the entrepreneurs, while just a few were started with bank loans. Entrepreneurs still depended on their personal savings to finance operations even after their businesses began to operate. Most of the entrepreneurs obviously faced difficulties in obtaining loans from the banks, thus limiting their abilities to expand their businesses. It is therefore suggested that policy makers put in place, measures to assist would-be and existing entrepreneurs in the cage fish industry financially to establish and maintain their enterprises, and also be able to expand towards meeting the challenge of achieving self-sufficiency in fish supply at both household and national levels.

ii. The entrepreneurs claimed that their major source of both production and market information was their colleague farmers. Based on this finding, it is recommended that the Ministry of Fisheries and Aquaculture Development establishes information centres within the cage fish farming communities in order to facilitate the flow of vital information to and from the entrepreneurs to enhance fish production, processing and marketing.

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i. It is also recommended that since farmer-to-farmer communication seems to be taking place strongly in the fish farming areas, community based extension services should be highly promoted by in order to reach out to more farmers in the face of resource constraints.

ii. A positive relationship was found between competencies of entrepreneurs and enterprise success. Some persons entered the cage fish business without having the requisite competencies. Such ventures are likely to perform poorly or even fail eventually. It is recommended that the government through the Ministry of Fisheries and Aquaculture Development should formulate and implement training programs aimed at equipping cage fish farmers with entrepreneurial skills.

iii. A sizeable number of enterprises were in their start-up phases. It is recommended that interventions must be geared inducing their growth and sustainability.

## 5.6 Future research direction

i. Even though entrepreneur and enterprise characteristics showed significant positive relationships with success of cage fish enterprises, these were all weak relationships. There would therefore be the need to carry out further investigations to know the types of relationships that exist between cage fish enterprise success and other factors like the contextual environment within which the cage fish businesses operate.

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ii. Since this study was done in only two districts, the researcher would like to recommend a nationwide survey to get deeper insight into the cage fish industry in Ghana, as information and data on the industry is scanty at the moment.

iii. Advanced studies should be carried on economic contributions of the cage fish industry to the overall fish production in Ghana and the Gross Domestic Product (GDP).

iv. Available data on fish production in Ghana is not segregated to highlight the exact contributions of cage fish sources to the overall fish production in the country. Besides, promoting cage fish farming as a main source of farmer livelihood and women empowerment would be interesting area to consider.

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# APPENDICES

**APPENDIX 1 Questionnaire**

**UNIVERSITY OF GHANA**
**COLLEGE OF AGRICULTURE AND CONSUMER SCIENCES**
**DEPARTMENT OF AGRICULTURAL EXTENSION**
**QUESTIONNAIRE**

---

*Dear Respondent,*

*This questionnaire is intended to facilitate the study on* ***"Entrepreneur and Enterprise Characteristics as Correlates of Success of Cage Fish farming in the Asuogyaman and South Dayi Districts of Ghana."***

*The information provided for this research will be used purely for academic purposes. The recommendations made will be of great importance to your business. Every information given here will be treated with the greatest confidentiality.* ***Please you may not indicate your name.***

---

*Questionnaire No.....*

**PART ONE: Demographic characteristics of respondents**

***Please tick*** the appropriate box for the questions below:

1. What is your sex? A. Male [ ] B. Female [ ]
2. What is your age? ……years.
3. Does or did any of your close family members own a cage fish enterprise?

   A. Yes [ ] B. No [ ]

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4. What is your highest educational qualification?

   A. No formal education [ ]

   B. Basic education [ ]

   C. Secondary/Technical [ ]

   D. Tertiary [ ]

5. What is your position in this enterprise?

   A. Owner [ ] B. Manager [ ] C. Both Owner and Manager [ ]

6. How long have you been on the job as the owner or manager of this business?

   ……years.

**PART TWO: Competencies of Respondents**

Please use the following scales to indicate the degree to which you agree or disagree with the following statements as a cage fish entrepreneur (**Circle** the best response).

1= Strongly Disagree (**SD**)
2= Disagree (**D**)
3= Undecided (**U**)
4= Agree (**A**)
5= Strongly Agree (**SA**)

| **Items** | **SD** | **D** | **U** | **A** | **SA** |
|---|---|---|---|---|---|
| 7. **Technical know-how** | | | | | |
| When selecting a site to place the cages, areas where the water is calm and stagnant should be avoided. | 1 | 2 | 3 | 4 | 5 |
| Cages should be anchored in at least 8-10 metres of water. | 1 | 2 | 3 | 4 | 5 |
| The sex of fingerlings is not a matter to consider when buying the fingerlings. | 1 | 2 | 3 | 4 | 5 |
| It is easier to monitor the response of fish to sinking feed than floating feed. | 1 | 2 | 3 | 4 | 5 |
| Dead fish found floating should be removed daily and recorded. | 1 | 2 | 3 | 4 | 5 |
| The total daily ration for fish should be divided over 2-3 feedings. | 1 | 2 | 3 | 4 | 5 |
| Cages must not be harvested totally before they are restocked with fresh fingerlings. | 1 | 2 | 3 | 4 | 5 |

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| | | | | | |
|---|---|---|---|---|---|
| 8. **Attitude towards work** | | | | | |
| *(Achievement)* I do not believe that business success must be judged by concrete results. | 1 | 2 | 3 | 4 | 5 |
| *(Self-esteem)* I believe that it is important to get along with the people you work with in order to succeed in business. | 1 | 2 | 3 | 4 | 5 |
| *(Risk taking)* I am willing to take risk in my business. | 1 | 2 | 3 | 4 | 5 |
| *(Innovation)* I believe it is important to continually look for new ways to do things in business. | 1 | 2 | 3 | 4 | 5 |
| *(Innovation)* I believe that to become successful in business, you must spend some time everyday developing new opportunities. | 1 | 2 | 3 | 4 | 5 |
| 9. **Start-up experience** | | | | | |
| I have had training in management before managing this enterprise | 1 | 2 | 3 | 4 | 5 |
| I have not had technical training before managing this enterprise. | 1 | 2 | 3 | 4 | 5 |
| Before working in this enterprise, I already have experience in cage fish farming. | 1 | 2 | 3 | 4 | 5 |
| 10. **Managerial skills** | | | | | |
| *(Planning and organisation)* I am able to organise information from various sources in order to draw proper plans to achieve the goals of this enterprise without waste of resources. | 1 | 2 | 3 | 4 | 5 |
| *(Marketing)* I have established an effective market information gathering system. | 1 | 2 | 3 | 4 | 5 |
| *(Marketing)* I have developed strategies to ensure access to inputs and product markets. | 1 | 2 | 3 | 4 | 5 |
| *(Pricing)* Prices of fish harvested are determined by this enterprise, and not by our customers. | 1 | 2 | 3 | 4 | 5 |
| *(Negotiation)* I negotiate competitive interest rates, loan repayment terms, and collateral requirements for this cage fish enterprise. | 1 | 2 | 3 | 4 | 5 |
| *(Financial management)* I have established positive business relationships with our lenders. | 1 | 2 | 3 | 4 | 5 |
| *(Financial management)* I continue to improve my financial management skills through continuing education. | 1 | 2 | 3 | 4 | 5 |
| *(Time management)* My priorities are not defined according the goals of the enterprise and available time. | 1 | 2 | 3 | 4 | 5 |
| *(Communication)* I am actively able to communicate effectively with my stakeholders. | 1 | 2 | 3 | 4 | 5 |

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**PART THREE: Enterprise Characteristics**

11. What is the age of this enterprise? ……..yrs.

12. What is the ownersip type of this enterprise?

A. Inherited [ ] B. Sole ownership [ ] C. Established as a partnership [ ]

D. Other (please specify) .....

13. How many cages did you have in this enterprise when it began to operate? .....

14. How many cages do you currently have in this enterenterprise? .....

15. Do you consider the location of this business enterprise to be impacting positively on the success of your operations? A. Yes [ ] B. No. [ ]

16. Please explain your answer to question 15.

…….....

……..……

……..……

…….....…..

17. How did you raise funds to start this enterprise?

A. Bank loan [ ]

B. Microfinance institutions [ ]

C. Trade Credit [ ]

D. Personal Savings [ ]

E. Relatives [ ]

F. Friends [ ]

G. Government support [ ]

H. Others (please specify) .....

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18. Currently, what is the main source of finance for this enterprise?

A. Bank loan [ ]

B. Microfinance institutions [ ]

C. Trade Credit [ ]

D. Personal Savings [ ]

E. Relatives [ ]

F. Friends [ ]

G. Government support [ ]

H. Others (please specify) .....

19. What is the **main source** of production information used by this enterprise?

A. Radio [ ]

B. Television [ ]

C. Agric. Extension Officers [ ]

D. The Internet [ ]

E. Colleague fish farmers [ ]

F. Research Institutes [ ]

G. Our customers [ ]

H. Other (please specify).....

20. What is the **main source** of market information used by this enterprise?

A. Radio [ ]

B. Television [ ]

C. Agric. Extension Officers [ ]

D. The Internet [ ]

E. Colleague fish farmers [ ]

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F. Research Institutes [ ]

G. Our customers [ ]

H. Other (please specify).....

21. List four (4**) main challenges** faced by this enterprise.

A. .....

B. .....

C. .....

D. .....

22. What do you think can be done to overcome the above challenges?

A. .....

.....

B. .....

.....

C. .....

.....

D. .....

.....

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**PART FOUR: Enterprise Success**

Please provide the information requested regarding your enterprise below.

| Information | Years | | | | |
|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 |
| 23. No. of cages in production | | | | | |
| 24. What is your main unit of measure of fish sold? *(kilos / boxes / pans / etc)* | | | | | |
| 25. Quantity of fish sold *(in kilos/boxes/pans/etc.)* | | | | | |
| 26. Unit cost of fish sold (GHc) | | | | | |
| 27. Cost of one fish cage (GHc) | | | | | |
| 28. Total cost of fingerlings (GHc) | | | | | |
| 29. Total cost of fish feed (GHc) | | | | | |
| 30. Total cost of labour (GHc) | | | | | |
| 31. Other cost (GHc) | | | | | |
| 32. Number of permanent employees | | | | | |
| 33. Number of casual employees | | | | | |

Please use the following scales to indicate the degree to which you agree or disagree with the following statements. Please read each item carefully and **circle** the best response.

1= Strongly Disagree (**SD**)
2= Disagree (**D**)
3= Undecided (**U**)
4= Agree (**A**)
5= Strongly Agree (**SA**)

| **Items** | **SD** | **D** | **U** | **A** | **SA** |
|---|---|---|---|---|---|
| 34. **Customer satisfaction** | | | | | |
| My customers are satisfied with my products most of the time. | 1 | 2 | 3 | 4 | 5 |
| My customers are happy with the superior value of my products compared to my competitors. | 1 | 2 | 3 | 4 | 5 |
| I regularly receive complementary feedback from my customers about fishes sold from this enterprise. | 1 | 2 | 3 | 4 | 5 |
| I am not able to address complaints of my customers on time. | 1 | 2 | 3 | 4 | 5 |

35. Please provide any additional information you wish to share.

.....

.....

**THANK YOU VERY MUCH**