**STRATEGIC MANAGEMENT DETERMINANTS OF VALUE ADDITION OF INDUSTRIAL FISH PROCESSORS IN THE SEA FOOD PROCESSING SUB-CHAIN IN KENYA**

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**MAY, 2015**

# DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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## DEDICATION

This piece of work is dedicated to my dear parents Mr. & Mrs. Simba and Mr. & Mrs. Kamunya, for all that they have sacrificed to raise me up and direct me in the right path of life. I really salute your dedication. My husband Mr. Samuel Theuri Kamunya for all the material and moral support, Our dear son, Netanel Kamunya Theuri, to whom I'll soon hand over the mantle, with this word of caution, "In the long-run, faith in God, hard work and honesty in all that you do and say, pay."

# ACKNOWLEDGEMENT

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## LIST OF ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **AFP** | Artisanal Fish Processors |
| **AFIPEK** | Kenya Fish Processors and Exporters Association |
| **ANOVA** | Analysis of Variance |
| **BMU** | Beach Management Units |
| **CEO** | Chief Executive Officer |
| **CMM** | Co Managed Materials Management |
| **CPFR** | Collaborative Planning Forecasting and Replenishment |
| **DWF** | Distant Waters Fishing |
| **EU** | European Union |
| **ERS** | Economic Recovery Strategy |
| **FAO** | Food and Agriculture Organization |
| **GDP** | Gross Domestic Product |
| **ROK** | Republic of Kenya |
| **IFP** | Industrial Fish Processors |
| **ISO** | International Organization for Standardization |
| **ITCD** | Institute of Trade Commercial Diplomacy |
| **JIT** | Just in Time |
| **JKUAT** | Jomo Kenyatta University of Agriculture and Technology |
| **KOFC** | Kenya Oceans and Fisheries Council |
| **KOFS** | Kenya Oceans and Fisheries Services |
| **KMFRI** | Kenya Marine and Fisheries Research Institute |
| **MDG** | Millennium Development Goals |
| **MoF** | Ministry of Fisheries |
| **MOLFD** | Ministry of Livestock and Fisheries Development |
| **NGOs** | Non- Governmental Organizations |
| **SD** | Standard Deviation |
| **SHRD** | School of Human Resource and Development |
| **SWOT** | Strengths, Weaknesses, Opportunities and Strengths |
| **SPSS** | Statistical Package for Social Sciences |
| **SRA** | Strategy for Revitalizing Agriculture |
| **PRSP** | Poverty Reduction Strategy Paper |
| **ROK** | Republic of Kenya |

| | |
|---|---|
| **USAID** | United States Agency for International Development. |
| **US** | United States |
| **VA** | Value Addition |
| **VIF** | Variance Inflation Factor |

# DEFINITION OF TERMS

**Fishing industry:**     It includes both recreational, subsistence and commercial fishing and the harvesting, processing and marketing sectors (FAO, 2013)

**Fish processing:**     the processes associated with fish and fish products between the time fish are caught or harvested, and the time the final product is delivered to the   customer (wikipedia.com)

**Value:**     Value is any activity that increases the market form or function of the product or service; and in today's business climate, there is a need to maximize the value of every process in a business (Jacoby, 2005).

**Value addition:**     Any additional activity that in one way or the other change the nature of a product thus adding to its value at the time of sale (Miles & Snow, 2003).

**Population**     an entire group of individuals, events or objects having common observable characteristics (Mugenda & Mugenda, 1999).

# ABSTRACT

The general objective of this study was to investigate the strategic management determinants of value addition in the sea food processing sub chain in Kenya with specific focus of the industrial fish processors in Kenya. Specifically, this study investigated the effects of strategic planning practices, technological competitiveness, market competition and corporate policies on value addition of the industrial fish processors in Kenya. The study employed a survey research design in data collection. This research employed quantitative data collection method whereby data was gathered by the use of closed ended questionnaires which were self-administered. Factor analysis was used to assess the validity and Cronbach alpha to assess reliability of the questionnaire. Multiple regression analysis (standard and step wise) were conducted to determine the relationship between the strategic management determinants and value addition. Results confirm the varying importance of the strategic management determinants in the sea food processing sub chain in Kenya. In general, the results reveal that market competition and corporate policies have significant and positive effects on value addition, while strategic planning and technological competitiveness have insignificant effects on value addition in the sea food processing sub chain in Kenya especially with the industrial fish processors in Kenya. The study recommends that to improve value addition in the sea food processing sub chain in Kenya, managers of the industrial fish processors in Kenya should nurture and develop market competition and corporate policies.

# CHAPTER ONE
## INTRODUCTION

### 1.1 Background

The world seafood industry plays a significant role in the economic and social wellbeing of nations, as well as in the feeding of a significant part of the world's population. Fishing and fish farming has emerged as one of the major food processing occupations of mankind. In ancient times, economically and socially backward people were employed in this profession. The advent of modern mechanized fishing vessels has brought vast changes in the attitude of the public fishing and seafood processing. From low income and socially backward communities the profession has shifted to the hands of industrialists and technologists (Visvanathanm *et al,* 2006).

The sector and its related activities are important for economic output and growth. It employs over 155 million people worldwide; 98 percent, from developing countries (FAO, 2012). The world's population is expected to increase by 36% in the years 2000 to 2030, to 8.3 billion. It is also expected that the estimated total seafood demand will be 183 million tons by 2030, but the estimated supply will be only 150 to 160 million tones. (Bastien, 2003) Thus, there is a sizable gap between demand and supply. However, global capture fisheries will be able to provide only 80-100 million tons of fish annually on a sustainable basis. The global seafood market is estimated at US$ 100 billion per annum. Also, the world demand for seafood increases by 3% each year. The world largest seafood consumption in the world is by Japan, followed by European Union with the top five consumed species being salmon, shrimp, tilapia, cat fish and crab (World Nutrition Forum, 2006).

### 1.1.1 The Kenyan Perspective

Agriculture is the mainstay of the Kenyan economy and currently represents 24% of the GDP (RoK, 2012). About 18 per cent of growth in GDP in 2012 was from the sector, up from 7.5 per cent recorded in 2011 (RoK, 2013). More than one third Kenya agricultural produce is exported and this accounts for 65% of Kenya's total exports. However most of the exports are in raw or semi-processed form (RoK, 2012).Agriculture also provides employment and livelihood to a large percentage of the population with an estimated 75% of the population depending on the sector either directly or indirectly (RoK, 2012). Kenya exports 6 billion worth of fish products to Europe, mainly Tilapia, and contributes to about

0.5 percent of the economy (FAO, 2012). Kenya's fisheries resources are important sources of food, employment and foreign exchange. Kenya's fishing communities have relied on fish as a rich source of protein, In fact, in some communities' fish has additional cultural values. There are at least 80,000 people working as fishers and fish farmers. The sector also provides livelihoods for about 2.3 million Kenyans involved mainly in fish processing and trade (RoK, 2008).

Kenya has a large agro-processing industry, reflecting the importance of the agricultural sector in the Kenyan economy. The majority of the pioneer industries during the colonial period were agro-based. According to the EPZA (2005) report, a wide range of agro-industries still exist today, ranging from processing staple foods and fruits, to fish processing for both domestic and foreign markets. Food processing is thus one of the key activities in Kenya's agro-processing Industry. Kenya has a long history of fishing with the Luo, Luhyia, and Abasuba ethnic groups having been active fishermen for more than five centuries. Until 20 years ago nearly all fish caught in Kenyan waters was consumed locally. Kenya started to export fish in the early 1980s, when fish processing factories were established around Lake Victoria (EPZA, 2005). Thus over the past 20 years, the fisheries sub-sector has gradually evolved from a domestic consumption oriented industry to an export oriented industry with value added processing being applied. The quantity of fish landed rose by 8.2 percent from 133 600 in 2009 to 144 505 in 2010. However, earnings from fishing, largely from the country's freshwater bodies rose by 36.2 percent from KSh13 billion in 2009 to KSh 17.7 billion in 2010. The jump in earnings was both, because of higher catches and better domestic and export prices (RoK, 2011). Lake Victoria accounted for the largest quantity (78.7 percent) and highest value of fish landed by freshwater body.

Admittedly, Vision 2030 does not specifically identify fishing as one of the priority sectors. However, it is an important subsector because it is a major source of livelihood for communities which live on the shores of Lake Victoria, Lake Turkana and Lake Naivasha, and those who live near the Tana River and Indian Ocean. Fishing in Kenya is mostly carried out by artisanal fishermen operating small fishing boats in inland lakes and marine waters. Some fish is sold fresh while a significant proportion is processed for later consumption. Artisanal Fish Processors (AFPs) prepare dried and smoked fish mostly for local market, while Industrial Fish Processors (IFPs) freeze or chill fish for export and to a

lesser extent, for consumption in Kenya's urban areas. IFPs' have become the industry's driving force. They collect fish from the beaches using refrigerated trucks, buying through intermediary medium and large-scale traders and process them for export.The fisheries sub-sector is expected to continue to grow and expand, taking advantage of the lifting of EU ban to increase their exports to Europe and the discovery of new emerging markets for Kenyan fish products such as Israel and Dubai. Enhancement of quality standards in fish processing is also expected to stir growth in the sub-sector by increasing demand for Kenyan fish. The decision by the EU in December 2003 to upgrade Kenya from category II to I of the countries exporting food to the Europe market is also expected to further improve the fishing industry in Kenya. This will also ensure that fish destined to both local and export markets are handled in the most appropriate manner minimizing post fishing losses and relieving stress on the capture fishery.

## 1.1.2 The Industry Structure

There are 17 industrial fish processing companies in Kenya all of which are export oriented and can be classified as either land based establishments or water-based freezer vessels. These companies mainly produce frozen and chilled fish for export to European and other non-European markets. These companies deal in different fish species including Nile Perch, prawns, lobsters, octopus, cuttlefish and squids (EPZA, 2005 & Afipek, 2012). Among the newest industrial fish processing companies that have been established include; Fish Processors (2000) Ltd, Samaki (2000) Ltd, Banner Distributors Ltd and Crustaceans Processors. The 17 industrial fish processors in Kenya have an installed capacity of 437 Metric tons per day of which only 213.4 metric tons per day is utilized. The sector is regulated and controlled by the Fisheries Department, which falls under the Ministry of Livestock & Fisheries. Setting up fish processing facilities in Kisumu and at the coast is in line with the Vision 2030 targets to contribute to the growth of the manufacturing sector, with positive outcomes for Vision 2030. This is because it will increase the value added component of the sector and also stimulate the growth of off shore fishing, which is largely untapped (Businge & Ondimu, 2010).

### 1.1.3 Background of Traditional Fish Processing in Kenya.

In Kenya, the most popular traditional fish preservation methods are by smoke-drying, hot smoking, sun drying and dry salting. This is also reflected in the bulk of the fish sold in most markets. Fish smoking is a practice in the Tana River area of coast province where catfish is the predominantly smoked fish. Fish smoking is relevant in the artisanal fisheries in that it prolongs the shelf life of the fish, enhances flavour and increases utilization of the fish, reduces waste when catches are good, and increases protein availability to people (Jallow, 1995). Traditionally, the method uses much labour, with women complaining of smoke in their eyes. Lots of firewood is used which raise environmental concerns. Poor quality, burnt and breakable fish products with low market value are produced in the end. The use of sun dried fish is also common in several other areas of the coast. During glut, the processors in some of these areas however lay the fish on the ground or on sand occasionally covered with fishing nets or on rocks to dry (Per. Com. Fisheries Dept.). The disadvantage of this method is that the slow drying process makes it unhygienic and also contributes to partial destruction of proteins and lipid oxidation. If drying is near homes, the fish has to be brought inside every time it rains and each evening to avoid dew and its consequences such as moulds. Dust Contamination, insect infestation, and exposure to harmful human and animal handling are the other disadvantages of natural outdoor drying. All these result in very low quality fish with limited market circulation hence low income.

### 1.2 Statement of the Problem

Kenya's fisheries sector plays an important role in the national economy. For instance, the sub-sector total earnings from fish landed rose from KSh 11.5 billion in 2008 to KSh 12.0 billion in 2009 attributed to increased fish landings and favorable domestic and export market prices (FAO, 2012). The value of freshwater fish increased from KSh 10.72 billion in 2008 to KSh 11.2 billion in 2009, accounting for 93.5 % of the total revenue generated from the fisheries sub-sector in 2009 (RoK, 2010). This figure could have been higher if value addition at the various stages of the supply chain is considered and post-harvest losses minimized. Additional statistics indicate that the sector contributes significantly to many coastal economies in generating income, employment, and foreign exchange earnings to the fishing communities, fish traders, fish processors and fish farmers. The sector supports about 80,000 Kenyans directly and about 800,000 indirectly (RoK, 2008). In addition, the fishery sector is one of the key contributors to food security and poverty alleviation in many developing nations (FAO, 2012). The developing world is also more

dependent on fish as their source of protein, having a 20 % contribution of fish to total animal proteins, compared with the developed world's 12.3 % (Laureti, 1999). It is, therefore, clear that expanding the fishery sector has contributed to economic growth in the developing world.

The vision 2030 has three pillars; political, economic and social pillars. The economic pillar focuses on moving the economy up the value chain (RoK, 2010). One of the ways of achieving this is through the agriculture sector that requires a strong focus on increasing market access through value addition and by processing, packaging and branding the bulk of agricultural produce. This entails proactively exporting value- added goods to regional and global markets. Research indicates that most of the rich nations have a thriving industrial sector whereas the poorest countries have agriculture, with very little value addition, as their dominant economic sector. Kenya is lucky to have an active agricultural sector which through industrial activities can scale up value addition and thus make the country self-sufficient in food supplies (RoK, 2012).

According to the sessional paper no. 10 of 2012 on Kenya vision 2030, Value addition in agriculture is important in determining the competitiveness of Kenya's produce on world markets. Kenyan farmers export semi processed, low-value produce, which accounts for 91 per cent of total agriculture related exports. The limited ability to add value to agricultural produce, coupled with high production costs (e.g. the prices of energy and infrastructure), makes Kenyan agricultural exports less competitive in global markets. For instance statistics show a disconnect between value addition and production of fish. The production of fish in the year 2010 was 158,000 tones, whereas the fish traded was 78,000 tones (FAO, 2012). This is indicative of the amount of wastage that is occurring in the value chain of fish where a lot of fish is sold unprocessed. For instance in spite of the fact that Kenya produced 158,000 tons of fish as indicated above during period 2010, there only exist one Tuna factory that produces cooked frozen Tuna loins, its noteworthy that even after this process the tuna has to be taken to EU for further processing. This is possible if key players in the industry can identify deficient value addition points in the sea food supply chain and step up value addition. Most sea food in Kenya is handled, processed, transported and stored without proper equipment and through fairly unhygienic and un standardized processes, which makes it very difficult for Kenya's sea food products to easily access the outside market.

Even in the face of these challenges, very little in the way of enhancing the entire fish processing and marketing value chain has happened in the last decade. The Kenyan seafood industry presents a complexity of interwoven value chains which cut across fresh and processed fish, industrial and artisanal processing, domestic and export markets and food and feed products. The sea food sector would have probably grown further if value additions at the various stages of the supply chain are considered and post-harvest losses minimized. This study sought to establish the strategic management determinants of value addition in the sea food processing sub chain in Kenya and to explain how they affect the industry, in terms of value addition. Information gathered and the recommendations thereof will help to create a more complete and efficient sub -chain and, therefore, optimize the economic as well as social benefits of the fishing industry to the country.

## 1.3 Research Objectives

This study was guided by the general and specific objectives as outlined.

## 1.3.1 General Objective

The general objective of this study was to assess the effects of strategic management determinants on value addition in the sea food processing sub-chain in Kenya with specific focus of industrial fish processing firms in Kenya.

## 1.3.2 Specific Objectives

This study was guided by the following specific objectives:-

1. To establish the effects of strategic planning practices on value addition in the IFPs in Kenya.
2. To determine the effect of technological competitiveness on value addition in IFPs in Kenya.
3. To analyze the effect of market competition on value addition in the IFPs in Kenya.
4. To establish the effect of corporate policies on value addition in IFPs in Kenya.

### 1.4 Hypotheses

This study was guided by the following hypotheses:-

1. **Hypothesis One**

   **$HO_1$:** Strategic planning has no significant effect on value addition in the IFPs in Kenya.

   **$HA_1$:** Strategic planning has a significant effect on value addition in the IFPs in Kenya.


2. **Hypothesis Two**

   **$HO_2$:** Technological competitiveness has no significant effect on value addition in the IFPs in Kenya.

   **$HA_2$:** Technological competitiveness has a significant effect on value addition in the IFPs in Kenya.


3. **Hypothesis Three**

   **$HO_3$:** Market competition has no significant effect on value addition in the IFPs in Kenya.

   **$HA_3$:** Market competition has a significant effect on value addition in the IFPs in Kenya.


4. **Hypothesis Four**

   **$HO_4$**: Corporate policies have no significant effect on value addition in the IFPs in Kenya.

   **$HA_4$**: Corporate policies have a significant effect on value addition in the IFPs in Kenya.


### 1.5 Importance of the Study

The fishery sector contributes significantly to many coastal economies in generating income, employment, and foreign exchange earnings to the fishing communities, fish traders, fish processors and fish farmers. The sector supports about 80,000 Kenyans directly and about 800,000 indirectly (RoK, 2008). In addition, the fishery sector is one of the key contributors to food security and poverty alleviation in many developing nations (FAO, 2012). This study will identify the strategic determinants of value addition and the findings of the study will help these IFPs improve hence impacting the lives of the mentioned groups above.  The findings of the study will be useful to policy makers by

informing them on the strategic management determinants of value addition and by applying the findings and recommendations so as to improve the performance of this sector. To practioners, the findings will be useful in identifying the strategic management determinants of value addition. IFPs would benefit from understanding the effective strategic management relationships that exist between different stakeholders in the industry. To scholars, the results would contribute to the existing knowledge on value addition as applied in the sea food industry. It would assist in providing sources of information for further research.

## 1.6 Scope of the Study

There are 17 industrial fish processing firms in Kenya (EPZA, 2005 & Afipek, 2012). This study targeted the 17 industrial fish processors we have in Kenya with the aim of trying to establish the strategic determinants of value addition namely strategic planning practices, technological competitiveness, level of market competition, corporate policies and how they affect value addition in these industries.  In addition, decision makers in the regulatory organizations such as those working under the Ministry of Fisheries, Kenya Marine Fisheries Research Institute, with specific bias to value addition were targeted in this study to give a comprehensive picture of the whole chain.

## 1.7 Limitations of the study

The study covered the 17 industrial fish processors in Kenya. The researcher sought the help of data collectors who helped in data collection process to ensure that all IFPs were targeted and a wider scope of study was covered. A lot of time was taken to collect data since most of the IFPs operate on seasonal basis. Majority are affected by the weather and temperatures, this quite delayed the data collection process since they had to close down during the off season. More data collectors were engaged upon reopening of the IFPs to cater for the time lost during the closure and to overcome the issue on seasonality.

**1.8 Structure of the Thesis**

The structure of this thesis is organized as follows: -

*Chapter one Introduction: this* chapter gives an introduction on the thesis by describing the background of this research. It also describes the statement of the problem, research objectives, scope and significance of the research.

*Chapter two Literature review:* this chapter reviews the different streams of strategic management theories. It explores general strategic management concept and theories including different schools of thought in strategy. It then focuses on theories and past research on strategic management and how it relates to value addition in the sea food industry.

*Chapter three Research Methodology:* This chapter gives a detailed explanation on the research methodology adopted to carry out the study. The methodology used to test the hypothesis as well as aspects of population, sample size, instruments used to collect data, as well how data was analyzed for the study.

*Chapter Four Research findings and discussions:* this chapter describes the results of the research study performed to test the conceptual framework and research hypothesis. It evaluates the general characteristics of the respondents, survey constructs, reliability and validity of survey constructs. The chapter further reveals the results of statistical analysis to test the research hypothesis.

*Chapter five Conclusions and Recommendations:* this chapter summarizes the main conclusions and recommendations of the research study as well as giving the possible future research areas.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Introduction

This chapter deals with a brief background on fish processing in Kenya, a simple fish value chain, the theoretical framework, the conceptual framework, review of key variables influencing value addition in the sea food processing sub-chain and gaps that exist in the research.

### 2.2 Theoretical Framework

The following section presents theories on value addition. This study is anchored on two major theories namely, The Value Chain Theory by Michael Porter and Resource Based theory by Barney, 1991. Porter's value chain model emphasizes creation of value adding activities that offer competitive advantage to the organization from the source to the customer (Johnson et al., 2013) and it is the theory that guided in the development of the conceptual framework.

### 2.2.1 The Value Chain Theory

Value chain analysis describes the activities within and around an organization, and relates them to an analysis of the competitive strength of the organization. Therefore, it evaluates with each value each particular activity adds to the organization's products or services. This idea was built upon the insight that an organization is more than a random compilation of machinery, equipment, people and money. Only if these things were arranged in to systems and systematic activities it will become possible to produce something for which customers are willing to pay a price.

The value chain concept is a systematic approach that has, over time, evolved hence deriving from different subjects (Silva & Filho, 2007). The scientific symposium regarding the vertical integration of production and distribution processes, as stipulated by Nang'ole, Mithofer & Franzel (2011) began in the 1960s through a concept known as 'filière'. This concentrated on how local production systems are linked to the processing industry, export, trade and final utilization (van den Berg et al., 2009). The filière, according to Nang'ole et al. (2011), was used to explain the flow of services and physical input in the

final product production and in terms of its concern with technical relationships which are quantitative in nature. However, in 1985, Porter developed the value chain analysis as a tool for identifying the value of each production process step, in a move to identify various sources of competitive advantage. As stipulated by Nang'ole et al. (2011), Porter argued that the sources of competitive advantage cannot be spotted by looking at an organization as a whole, but rather the organization should be split in a sequence of activities.

According to Fearne, Martinez & Dent (2012), the value chain analysis comprises of primary activities which are directly related to manufacture, sales and distribution, and secondary activities which sustain the primary activities such as research & development, finance, procurement, planning and human resources. The primary activities directly contribute to adding value to production of goods and services, while the secondary (supporting) activities have an indirect influence on the eventual value of the product (van den Berg et al., 2009). The margin in the value chain implies that firms realize a profit margin that relies on their capacity to manage the connections or relationships between all activities in the value chain. As Lee et al. (2007) stipulate, the collaborative relationships influence the flow of both inbound and outbound information in addition to products and services, and there is proof that collaborative relationships are key elements for supply chains which are economically sustainable (Cousins & Mengue, 2006). In this context, it is fundamental that value chain management adopts a whole-of-chain standpoint, provided that opportunities exist for improvement (i.e. process, product and service) both within and between organizations (Bonney et al., 2007).

According to Nang'ole et al. (2011), Porter proposed the 'value system' as a substitute mode of approaching the search of competitive advantage sources. A value system constitutes of the activities implemented by all the organizations involved in the production of a good or service, beginning with basic raw materials to those engaged in the delivery to the final consumers. Therefore, this concept of value system is more extensive compared to the one of 'enterprise value chain' (van den Berg et al 2009). However, in Porter's framework, the concept of value system is mostly an instrument for assisting executive management in strategic decisions. Therefore, according to Porter's approach, value chain analysis is restricted to the organizational level, ignoring the analysis of downstream or upstream activities beyond the firm (Fasse et al 2009).

In carrying out value chain analysis, various guidelines exist. According to Nang'ole et al. (2011), the guidelines include four stages (Figure 2.1): Appraisal of value chains and related information e.g. conducting surveys to describe value chains and product sub-sectors, choosing products, areas to work, and partners, rapid market appraisals and data analysis; Design of interventions to improve value chain performances including technologies, institutional innovations, and policies; Implementation of interventions; and Monitoring and evaluation.
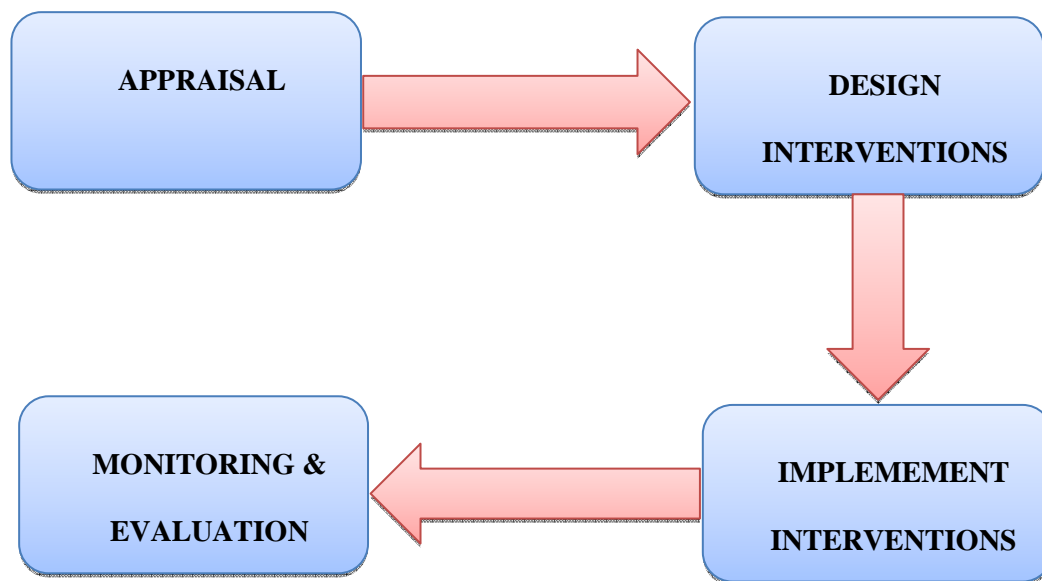


**Figure 2.1: Stages of Value Chain Analysis**

**Source: Nang'ole et al. (2011)**

Value chain analysis is therefore a diagnostic instrument for supporting the progression of consistent improvement at the chain level as a whole (Soosay et al., 2012). According to Taylor (2005), he defines value chain analysis as a multi-dimensional valuation of the value chain performance through assessment of information flows, product flows and the management and control of the chains. Value chain analysis concentrates on three fundamental issues: First, the information dynamics in the value chain from final consumption through to primary production and input suppliers and back again. Second, the creation and flow of value, in the presence of the final consumer, at each stage in the

value chain. Third, the nature of connections or relationships (Taylor, 2005; Bonney et al., 2007). "Not only does the diagnosis that results from a value chain analysis provide a mechanism for drawing the attention of different stakeholders to the opportunities for improvement at different stages in the value chain, it can also be an effective catalyst for change" (Soosay et al., 2012).

## 2.2.2 Resource Based Theory

The resource-based perspective argues that sustained competitive advantage is generated by the unique bundle of resources at the core of the firm (Conner and Prahalad, 1996; Barney,2001). In other words, the resource-based view describes how business owners build their businesses from the resources and capabilities that they currently possess or can acquire (Dollinger, 1999). The resource based theory aspires to explain the internal sources of a firm's sustained competitive advantage (Kraaijenbrink, Spender, & Groen, 2010). A resource-based perspective comprises of a rising and dominant area of strategy literature which responds to the question of a firm's identity and it's primarily concerned with the nature and source of strategic capabilities (Theriou et al., 2009). The resource-based view is basically an identification of characteristics that resources ought to have so as to yield returns and stability (Sheehan & Foss, 2007). This, according to Matthews (2006), partly dismisses concern with processes of building strategic resources through innovation and analogous creative acts, or such resources being renewed.

The resource based view suggests that variation in competitive markets stems from differences in the characteristics of competitors' resources and capabilities (Scheepers, Houg, &Bloom, 2008).  Resource based theorists contend that the assets and resources owned by companies may explain the differences in performance. Resources may be tangible or intangible and are harnessed into strengths and weaknesses by companies and in so doing lead to competitive advantage. The resource based view stipulates that in strategic management the fundamental sources and drivers to firms' competitive advantage and superior performance are mainly associated with the attributes of their resources which are valuable and costly to copy (Barney,2001; Mills, Platts, Bourne,2003; Peteraf &Beregen,2003). However, to possess these resources alone is insufficient to gain a competitive advantage and create value; firms must effectively manage their resources and build unique capabilities to gain advantage and realize value creation (Sirmon, Hitt, &

Ireland,2007). A fundamental ideology of the resource-based theory is the relationship between the resources the firm possesses, superior performance and competitive advantage. According to Alas & Sun (2007), the resource based view argues that the unique bundle of resources at the core of the organization does generate sustained competitive advantage. The theory highlights the principal matter of how to attain superior performance in relation to other firms within the same market and postulates that performance superiority stems from the acquisition and exploitation of unique resources of the organization (Wade & Hulland, 2004). Moreover, there is communication between the resources an organization possesses – i.e. its material and human resources – hence organizational resources are packed together (Carlucci & Schiuma, 2007).

Value creation occurs as firms exceed their competitors' ability to provide solutions to customers problems, while simultaneously maintaining or improving their long term financial performance, thereby creating wealth for owners (Morrow, Sirmon, Hitt, & Holcomb,2007). Therefore managers need to be able to identify key resources that will create value in their organizations such as technology, strategic planning as well as linking with the right markets so as to create value to the organization. In fact, the origin of resource based view is the work of Penrose (Barney & Arikan, 2001; Hoopes, Madsen, & Walker, 2003) who described a firm as "bundle of resources" the disposal of which between different uses and over time is determined by management decision making. Given that the resource-based view addresses the resources and capabilities of the firm as an underlying factor of performance, it was found to be a suitable theory to use in this study.

As shown in Figure 2.2, the strategic role of management is essential to the identification, development and utilization of vital resources and their influence on superior performance and sustaining competitive advantage (Clulow et al., 2007).

| Management's strategic role |
| --- |
| Key resources identification |
| Key resources development and protection |

| Key Resources | | |
| --- | --- | --- |
| | **Tangible Assets** | **Intangible** | **Capabilities** |
| **Value** | Value recognized in the balance sheet | Value results from reputation | Value is embodies in culture of firm and knowledge and skills of |
| **Barriers to duplication** | Easy for rivals to identify and duplicate | Unique & complex resources | Tackiness & casual ambiguity create |
| **Appropriability** | Fully appropriated by the firm | Value remains within firm due to resource inimitability & | Ownership structure reinforces inimitability enabling firm to appropriate value |

| Superior Performance – Market performance: rate of return relative | Sustainable Competitive Advantage – Consistent high |
| --- | --- |

**Figure 2.2: A resource-based view of value and relationship to sustainable competitive advantage. Source: Barry et al. (2005)**

The source of value from the resource based view is value flowing from resources that possess certain characteristics (Clulow et al., 2007). In the figure above, the heading "Value" indicates how key resources foster value according to the resource-based view. Therefore, "a resource is "valuable" when it contributes to a firm's ability to efficiently and/or effectively produce a marketplace offering that has value for some market segment or segments" (Hunt & Derozier, 2004). The resource-based view is a crucial idea in strategy because it proposes the potential to elucidate on sustainable competitive advantage, or the delivery process of long run returns to shareholders (Toms, 2010). These returns can be delivered through resources being accessed, comprising of for instance through monopoly control, creating difficulties in replicating resources as in the resource-based view, or like in the theory of competitive heterogeneity. But as Carter et al. (2008) argue, the resource based perspective is repetitious if the organization's possession of unique competencies cannot be determined independently of their description.

## 2.3 Conceptual framework

Mugenda (2008) defines conceptual framework as a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study. According to Young (2009), conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables. A conceptual framework shows the relationship between independent and dependent variables. Following the resource-based perspective, it was hypothesized that strategic planning practices, technological competitiveness, level of market competition and the corporate policies have an effect on the value addition in the IFPs. The variables were developed based on the literature review and the purpose of the study. The figure 2.3 presents the conceptual framework for this study.

| Strategic planning practices |
| --- |
| - Clear vision |
| - Clear mission |
| - Realistic goals |
| - Organization values |
| - Decision making strategies |
| - Clear objectives |
| - Value addition strategies |
| - Consultative strategies |

**Technological Competiveness**
- Modern technology
- Technical skills
- Corporate technology
- Training programs
- Knowledge base
- Technological base

**Market competition**
- Competitive strategies
- Competitive advantage
- Market differentiation

**Corporate policies**
- Legal and regulatory framework
- Institutional framework
- Operating standards
- Government agreements and protocols

**Value addition of IFPs**
- Product differentiation
- Customer satisfaction
- Employment generation
- Product quality
- Tailor made sea food products
- Cultural influence

**Independent Variables**                                    **Dependent Variable**

**Figure 2.3 Conceptual Framework**

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## 2.4 Review of Determinants of Value Addition

The following section presents a review on variables namely strategic planning practices, technological competiveness, level of market competition and corporate policies that affect value addition in the IFPs.

### 2.4.1 Strategic Planning Practices

Strategic management is defined, according to Taylor et al. (2005), as the involvement of analysis, decision making and actions that a firm undertakes so as to create and sustain competitive advantage. This, according to Taylor et al. (2005), seizes two main aspects that go to the core of strategic management. First, an organization's strategic management consists of three continuous processes: analysis, decision making and implementation. That is, strategic management involves the analysis of strategic goals (i.e. mission, vision and strategic objectives) coupled with the analysis of the organization's internal and external environments. Second, the facet of strategic management is the study of why some organizations do outperform others. Therefore, there is need for managers to determine how competitive a firm is so as to achieve the advantages that are sustainable over a long-term period (Zahir, 2012).

Zafar et al. (2013) define the strategic management process as an instrument that has been successfully used by poorly performing firms so as to prepare for future challenges and hence improve long-term performance. Better analysis approaches and data collection of the organization can improve the efficiency of the organization and success of their plans. According to Tim (2006), strategic management is a process where an organization develops its strategies, starting with vision and mission statements made tangible as organization-wide goals and objectives. Once a firm's direction (goals and objectives) is specified, strategic management advances through strategic analysis and planning, plan formulation and implementation, and eventually monitoring and evaluation (Zafar et al., 2013).

Strategic planning is a process of having an organization's programs to accomplishing its mission and vision. As stated by Cassidy (2006), "A strategy on its own is directional in nature; and even though descriptions and analysis of the current situation are included, the strategic plan doesn't simply advocate the status quo, it directs a change of some kind".

According to Gates (2010), a classic strategic planning process scrutinizes an organization's contemporary situation and capabilities (the present situation), contemplations about how the organization would like to grow ( the desired future), its targets as an organization (what it will strive to do), and its intents for moving forward (how it will move forward).

These elements, according to Gates (2010) are explained as follows; The What: These are explanations of what the organization is doing and what it aims to achieve - its organizational intents - including its goals, objectives, as well as performance measures which are quantitative in nature. The Present: The current situation or environment, is normally described in regards to the organization's mission, guiding principles (or core values), the organizational strengths (or enablers), and organizational barriers (weaknesses or challenges).The Future: The anticipated future is explained by the organizational vision and targets. The How: The desired route to gaining the organizational goals, objectives, and mission is conveyed as a strategy or as strategic goals. The strategic goals replicate the main goals of the organization; hence suggest a particular set of strategies. The goals and stages to achieve these goals (that is the "whats" and "hows") can adopt a different tone or purpose at different levels of hierarchy in an organization. For instance, the strategy of an organization may function as a set of goals for staff at managerial level, for which they generate a sub-strategy, which eventually translates into goals for those in lower hierarchy levels.

A strategic plan is built on a thorough analysis of the organization's existing structure, governance, staff, program or service mix, collaborations, and resources (financial, human, technical and material). A well-developed strategic plan serves as a blueprint for making these changes because it describes the following: A vision for the future, strengths and weaknesses of the organization, the nature of the changes contemplated for future sustainable growth and development, the sequence of these changes, those who are responsible for guiding change, the resources required, whether they currently exist within the organization or must be generated from external sources. Strategic plans must also be systematically reviewed and revised so they remain topical, relevant and "cutting edge". The whole organization must embrace the plan so that the "daily decisions are then made on the basis of the plan, which must be both practical- based upon your organization's mission – and flexible, to allow for rapid change."

**Table 2.1: Strategic Planning Process**

| PHASE | OUTPUT | DETAILS |
|---|---|---|
| Where are we now? | Internal/ External Assessment | • Situation Inventory/ Environmental Scan<br>• Customer Analysis<br>• Quality Assessment and Benchmarking<br>• Strategic Issues |
| | Mission & Principles | • Broad comprehensive statement of the organization's purpose<br>• Core values, actions to achieve mission<br>• Employee and management involved |
| Where do we want to be? | Vision | • When combined with mission & principles, identifies the organization's uniqueness<br>• Captivating image of desired future of organization |
| | Goals & Objectives | • The desired results after 5 or so years<br>• Specific and measurable targets for accomplishment<br>• Leads to Quality Initiative goals & objectives |
| How do we get there? | Action Plans | • Strategies used to accomplish the goals & objectives<br>• Detailed work plans<br>• Leads to allocation of resources |
| How do we measure our progress? | Performance Measures | • Methods used to measure results<br>• Ensures accountability and continuous improvement-linked performance targets |
| | Monitoring & Evaluation | • Systems to monitor progress<br>• Compiles managements information<br>• Maintain plan on track. |

**Source: Brown (2008)**

A vision is a long-term frame of horizon developed to set forth the organization's mission and objectives. It's a pivotal focus for all activities in organization. An organization's mission can be defined as its purpose or reason for its existence or being. It defines the current and the future business activities of that organization and is the focal point of the organization's success (David, 2008). There are some challenges which industrial fish processors face. There is lack of confidence in the data that drive fishery management decisions. Stakeholders are not as involved in the legislative process as they should and there should be different jurisdictions and regulations among the many fishery management organizations resulting into complexity and inconsistency. There is also need for increased transparency and clearer communications in fisheries management, the dynamics of the ecosystem and food web should be considered to a greater extent in fisheries management decisions. In addition, stakeholders should be adequately represented on the legislative bodies since pollution is negatively affecting the health of fish stocks.

### 2.4.2 Technological Competitiveness

Technological competitiveness refers to leading in the ICT sector through having superior technological performance and characteristics as compared to competitors within the same industry (Mwawasi, 2014). According to Gudema (2015), the early adopters frequently achieve a major competitive advantage that isn't available later when a new, superior technology or modern production process comes along. Technology plays a fundamental role in enhancing the competitive advantage of an organization, but as Whitmire (2014) stipulates, businesses must warrant that the money, time and energy spent on technology is properly put.

According to Rothaermel (2008), for a firm to gain competitive advantage, it must have technological competencies that allow it to generate higher perceived value than the competitors or to produce the same products at lower cost, or simultaneously do both.The resource-based theory hinges on the resources and capabilities of the firm as an underlying factor of performance. Currently most fish farmers and traders use, if anything, self-made basket with a liner in which the ice lasts for about six hours. These containers pose a challenge then since the farmers and traders have to clean them to meet the safety standards and regulations. Thus posing a risk in the sector since the technology being used

is not competitive enough as compared to other international markets. The seafood processing industry needs new technologies to enhance quality, detect decomposition and extend product shelf life while adding minimal cost. New software will be needed to collect and manage data to allow a reliable prediction of remaining quality shelf life under controlled conditions. The productivity and competitiveness of seafood processing depends not only on the sources and costs of raw materials, but also on the influence of other costly resources: energy, water and labour. Large amounts of energy are required for refrigeration. There are opportunities for conservation through energy audits and demonstrating new technologies at processing plants. Primary processors are located in the same coastal areas facing increased population density and tourism, all of which place high demands on limited supplies of fresh water. As just one example, it takes about 40 gallons of water to process one pound of Pacific shrimp. Improved management, education and technology-transfer programs could achieve significant reduction in water use, resulting in financial and environmental benefits (Grant, 2005).

### 2.4.3 Market Competition

From an economic perspective, product and service market competition results in improvement of efficiency in firms (de Bettignies, 2006). According to Giroud & Mueller (2011), there are two kinds of market competition relevant to value addition: Competition in the product markets of firm's owners e.g. the product and service markets of an institutional investor; and Competition in the firm's product and service markets. Market competition is important in value addition because it influences innovation and productivity, the economic efficiency of the firm as well as drives out inefficient producers. Firms nowadays have to differentiate themselves and strive to remain on top of the competitors in the market so as to survive in the business (Warraich, et al., 2013). Business success depends on the ability to gain some advantage over its competitors. Warraich et al. (2013) further stipulate that accomplishing this competitive advantage is a strategic objective and that performance excellence will inevitably result from competitive advantage in the market. Market differentiation, according to Chadwick (2006), is a promotional method that creates a robust presence in a specific market. In this context, a manufacturer in the seafood processing industry may produce several varieties of a product to be marketed under one brand so as to offer itself a wide range of coverage and stimulate market dominance.

Seafood traded in the market is usually in the form of live/ fresh, frozen, prepared/ preserved and canned with freezing being the main method of seafood processing. The major world markets are Japan, USA and the European Union (FAO, 2012). A wide variety of markets are linked to the capture fisheries value chain. The main markets are the export markets for industrially processed fresh and frozen Nile perch fillets, and the domestic markets for fresh tilapia, artisanally processed fish (Nile perch, tilapia, omena1) and feed grade omena. Each of these markets is growing with supply generally lagging demand (Ardjosoediro & Neven, 2008). The fish catch is sold directly on the beach to various traders. Industrial Fish Processors (IFP's) agents buy the Nile perch that meets the processors' criteria (e.g. size, freshness) who take the IFP's ice-laden trucks to the mainland beaches.

Lower quality grade Nile perch, tilapia and omena are sold to a number of successive intermediaries along the supply chain: collecting traders, regional traders, wholesalers and retailers. Most of the retailing takes place in urban open-air markets and through street vendors. Sales of domestic fish products in modern retail outlets such as supermarkets are limited. Grading and the use of ice are minimal in these domestic end-market channels, resulting in high spoilage levels. Exports of fish are dominated by the export of Nile perch to the EU (FAO, 2012). Europe accounts for more than 80% of East Africa's Nile perch market – according to the fisheries annual statistical bulletin of 2006.

The main species that serve the domestic are tilapia and omena. The fisheries products consumed in Kenya consist of: Dried omena; Fresh, sun-dried or smoked tilapia; by-products of Nile perch (artisanal processed). Domestic consumption of fish in Kenya has increased in the last years. Prices are as high as Ksh. 140/ US$ 1.86 per kg and there is consumer awareness of the health benefits of eating fish as well. Fish also provides raw material (fishmeal) for producing animal feeds for the growing livestock and dairy markets in Kenya. A fishmeal industry was established in Kenya in the mid-1990s. Fishmeal is the protein ingredient in processing of animal feeds. The main inputs in the fishmeal industry are low-quality grade omena and Nile perch by-products (mainly fish frames after fillet removal). In this way, the fish sub-sector plays a significant forward linkage role in providing inputs to the animal feeds industry, especially the beef, dairy and poultry sub-sectors.

**2.4.4 Corporate Policies**

The fundamental legal tools that reinforce fisheries policies in Kenya include: The Maritime Zones Act; Chapter 378 of the revised Fisheries Act of 1991; Environmental Management Act of 1999; Kenya Forests Act of 2005; Kenya Ports Authority Act; Maritime Authority Act (Cap 250); Water Act; and the Local Authority and Planning Act (Japp, 2011). The Ministry of Fisheries Development manages the fishery resources in Kenya through the Fisheries Act (Cap 378) and the Maritime Act (Cap 371). The Ministry is thereby authorized to provide for the management, utilization, exploitation, exploration, conservation and the development of fisheries resources, and conduct maritime and fresh water fisheries research (ROK, 2013). The Ministry's mission is to ensure the sustainable management and development of fishery resources and products in the country for socio-economic development (ROK, 2013). Through the Science and Technology Act (Cap 250) of the Laws of Kenya, the Kenya Marine and Fisheries Research Institute was established so as to conduct fisheries research (Japp, 2011).

The Fisheries Act (Cap 378) allows the Director of Fisheries, through the Minister's approval, to provide regulations that support the development of fisheries in Kenya. Approved in 2009, the National Oceans and Fisheries Policy drafted an agenda for improvement in fisheries sector. In reference to the legal framework, the policy document emphasizes the need "to develop a comprehensive, modern legal and regulatory framework for fisheries management because the status and progress of national laws is not reflected in the international legal and institutional arrangements" (ROK, 2013). As a result, the Fisheries Act (Cap 378) is being reviewed and the gaps identified are tackled in the 2012 Fisheries & Development Bill (ROK, 2013).

The Kenya fisheries sector has operated without a comprehensive fisheries policy since independence (ROK, 2005). Fisheries production and management measures were, from time to time however, mentioned in various policy documents. Key among these include the various national Development Plans in which the government emphasized fish production from natural waters; National Food Policy of 1981 and 1994 in which the importance of fish as a nutritious food commodity was emphasized; District Focus for Rural Development policy of 1995 that required all districts to have fisheries presence irrespective of their fisheries potential; Poverty Reduction Strategy Paper (PRSP) of 2001

that introduced a social responsibility and poverty reduction element into the fisheries agenda; Economic Recovery Strategy for Wealth and Employment Creation 2003-2007 (ERS), into which the PRSP evolved, and that recognizes the contribution made by fisheries to local economies, subsistence and nutrition (ROK, 2005). The fisheries policy is anchored in two recent sectorial strategies (ROK, 2013). First is the strategy for the Ministry of Fisheries Development whose mission is "to ensure the sustainable management and development of fishery resources and products in the country for socio-economic development".

The other sectorial strategy is the Strategy for Revitalizing Agriculture (SRA) 2004-2014 which recognizes the importance of fisheries. The lack of a comprehensive national fisheries policy has reduced management and research effectiveness, discouraged investment in the sector, and thus constrained production growth. The government has developed these policies to encourage value addition, marketing and fair trade in Kenya's fishery products worldwide. In summary, Mwirigi et al. (2011) have supported the need to develop elaborate policy and regulatory frameworks in order to grow economic sectors.

### 2.4.5 The Measurement of Value Addition

Value addition in this case would refer to the processing and packaging provided to fishery resources in order to reduce wastage and hence increase the final value above the value in its initial or raw form (IBF, 2011). It is production process phase that involves enhancing product quality for the consumer and hence brings about higher net value. According to Lambert et al. (2006), value addition is the variation between value of goods and services produced and the input costs used in their provision. In this context, value addition is the seafood processing industry's gross receipts (income) minus expenditure for goods and services in the production process, but this should not be mistaken for profits (Lambert et al., 2006).

Value addition, according to Kim & Lalancette (2013), also refers to product improvement as a result of growth in knowledge, abilities, skills and other attributes the employees have gained due to experience in the respective field over time. The measurement of value addition provides additional pointers of company performance beyond production levels at one point in time. The benefits of adopting value-added measurement include: Providing a

fair estimate of contribution firms make to production process as it's monitored over time taking into account the initial production level; and Provides a more accurate estimate of the contribution firms make to the production process as it integrates a set of contextual features of the production process (Kim & Lalancette, 2013).

The value chain concept can analyze and describe a company's source of competitive advantage (Nang'ole et al., 2011). Horizontally interdependent activities produce added value for the consumer. The costs of these activities and how these activities produce at the profit margin for the company are examined in the value chain analysis. Value addition is created at different stages and by different actors throughout the value chain. It may be related to quality, costs, delivery times, delivery flexibility, innovativeness, etc. the size of value addition is decided by the end-customer's willingness to pay. Opportunities for a company to add value depend on a number of factors such as market characteristics (size and diversity of markets) and technological capabilities of the actors.

Moreover, market information on product and process requirements is key to being able to produce the right value for the right market (Trienekens, 2011). In this regard, finding value adding opportunities is not only related to the relaxation of market access constraints in existing markets but also to finding opportunities in new markets and in setting up new market channels to address these markets. The value chain is divided into primary activities that are involved in the physical creation, sale, transfer of goods and services to the customer, and support activities which provide technology, personnel and purchased inputs and which coordinate the primary activities (Fearne et al., 2012). So to generate value, the company has to know how to add value to a customer's value chain and how to control costs.

International trade in fish and fishery products has grown substantially over that last decades. Today, more than 30% of the fish caught for direct human consumption enters international trade. Developing countries account for approximately 50% of global fish exports (FAO, 2012). However, many countries, especially developing countries, export mainly raw products and only limited quantities of processed products. The former are in turn processed in industrialized countries. By so doing, these exporting countries are not extracting full benefits from their aquatic resources. Consequently, more and more development experts and institutions are advocating the transfer of value addition

technologies, know-how and investment capital to these developing countries. This is also attractive in view of the fact that value addition processes generate further employment and hard currency earnings. However, despite the availability of technology, many projects in value-adding for export collapsed. Careful consideration was not given to the various facets of their feasibility, including quality assurance, marketing, distribution and trade barriers, before embarking on a value-adding fish process (FAO, 2012). Fish is a highly perishable food which needs proper handling and preservation if it is to have a long shelf life and retain a desirable quality and nutritional value. The central concern of fish processing is to prevent fish from deteriorating.

Value addition is an expanding sector in the food processing industry, especially in export markets. Pomeroy & Dalton (2005) state that value is added to fish and fishery products depending on the requirement of different markets. In addition to preservation, fish can be industrially processed into a wide array of products to increase their economic value and allow the fishing industry and exporting countries to reap the full benefits of their aquatic resources. Globally, a transition period is taking place where cooked products are replacing traditional raw products in consumer preference. Societal changes have led to the development of outdoor catering, convenience products and food services requiring fish products ready to eat or requiring little preparation before serving. The Figure 2.4 represents the key links in fish and fishery product supply chain:
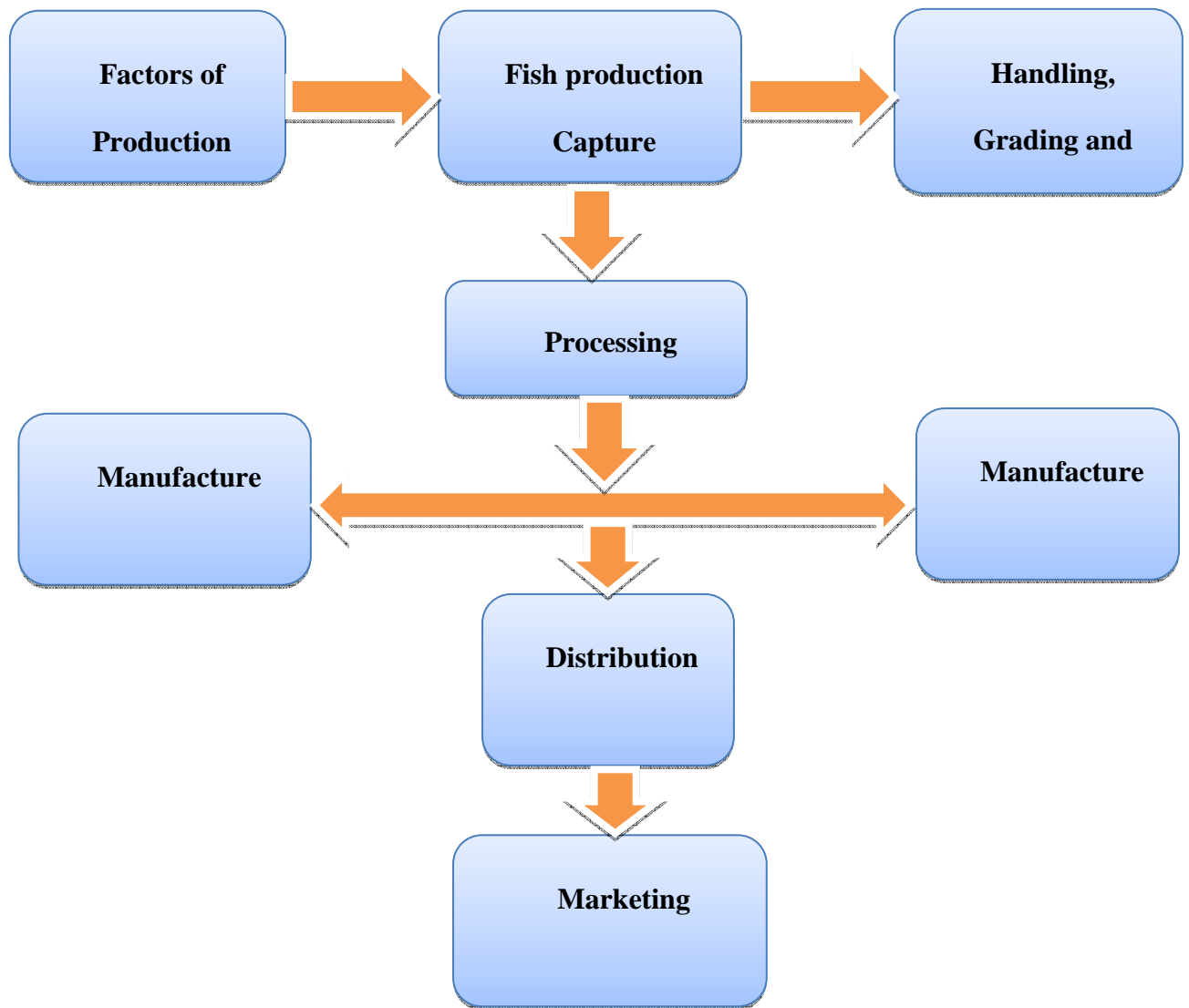
**Figure 2.4: Key Links in Fish and Fishery Product Supply Chain**

**Source: De Silva (2011)**

In summary, upgrading of developing country value chains is related to: one, addressing markets that offer opportunities for increased value added. Two, innovation in products, including marketing activities, and processes and lastly, vertical and horizontal organizational arrangements that enable chains to capture value from markets for various chain actors. The diagram below represents the value chain upgrading options that exist in the sea food industry.
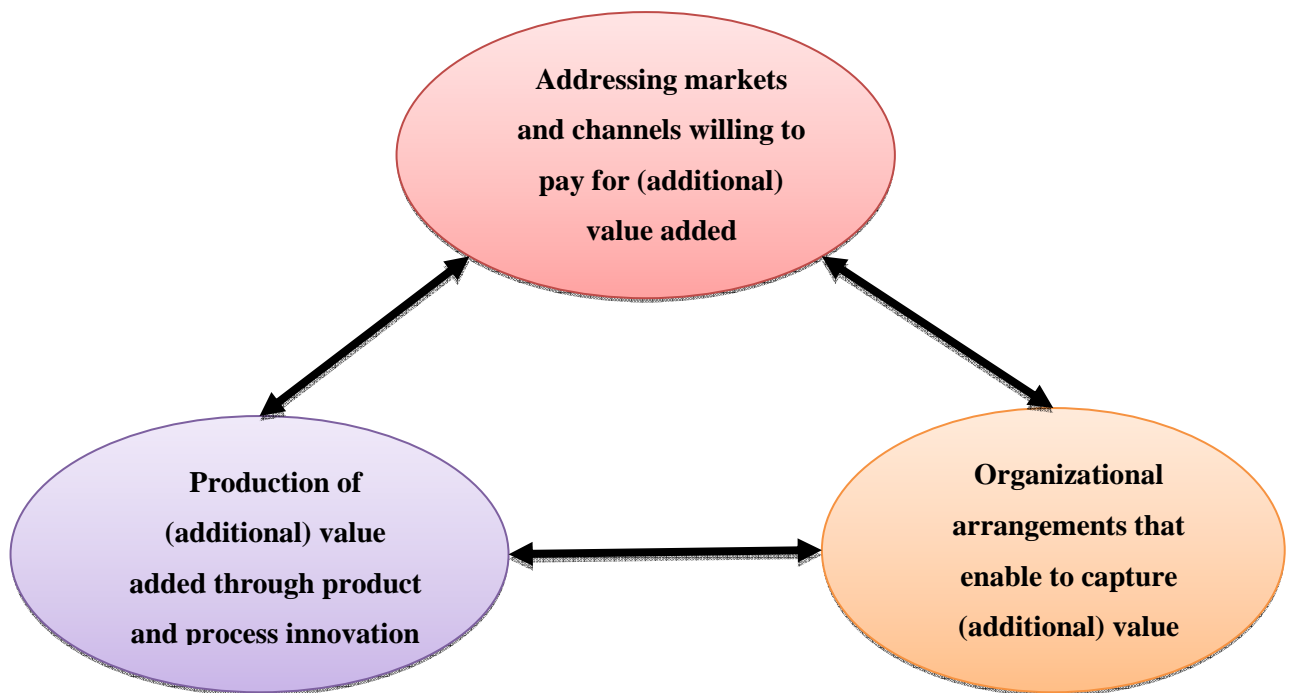
**Figure 2.5  Value chain upgrading options**
**Source: Trienekens, (2011)**

## 2.5 Empirical Review

Various studies have been carried out in the area of sea food Okisegere (2012) focused on the influence of value chain management practices on competitive advantage in Mombasa. The study laid emphasis on how value chain management practices can create competitive advantage. Other study that has been conducted and is closely related to the current study is by Ogolla and Wanjau (2013) that focused on factors affecting value addition in the leather industry. The study conducted by Ogolla and Wanjau (2013), focused on factors affecting value addition in the leather industry in Kenya and the following factors; technology, finance, capacity building and quality control were studied. Still on the leather industry a study conducted by Bowonder, Sadulla, and Jain (2009) who suggested that the leather industry should capture the traditional knowledge and integrates it with new knowledge and this study focused on the leather industry still. Most studies that have been conducted in Kenya have laid emphasis on traditional fish processing methods Odote (2008), harvesting and sustainability of marine fisheries Ochiewo (2006), challenges of managing the prawn fishery in Kenya Mwatha (2006) among others.

## 2.6 Research Gaps

A review of current studies indicates that there are very few studies that have been conducted on value addition in the IFPs. The existing studies on value addition have focused on other sectors such as the leather industry Ogolla and Wanjau (2013). These studies focus on factors that affect value addition in the specific industry in Kenya. Other studies have focused on the influence of value chain management practices on competitive advantage in Mombasa, (Okisegere, 2012). Little or no study has been done on the strategic management determinants of value addition of the sea food industry in Kenya and that is what necessitated the focus of this research area. Other studies have focused on the influence of value chain management practices on competitive advantage in the Mombasa, (Okisegere, 2012). None of the studies has focused on strategic management determinants of value addition in the sea food processing sub chain. The only study that has been carried out that is close to the current study is that which was conducted by Wanjau and Ogolla, (2013) on factors affecting value addition in the leather industry. This study therefore intends to fill these pertinent gaps in the literature by studying the selected independent variables on strategic management determinants that affect value addition in the sea food processing sub chain with specific focus of industrial fish processing firms in Kenya. This study will add value to existing literature by providing empirical evidence on strategic management determinants of value addition in the sea food processing sub chain with specific focus of industrial fish processing firms in Kenya and fill the existing contextual and conceptual gaps.

## 2.7 Summary

The literature reviewed the strategic management determinants on value addition. These include; strategic planning, technological competitiveness, market competition and corporate policies. Review of literature generally agrees that these variables affect value addition. Research has shown that strategic planning is a good management practice that benefits the business financially, lays ground work for developing the strategic capabilities needed for high performance and it's also deliberate in that management takes a conscious decision to make a radical change by embracing new strategies. Research suggests that resources inform of capabilities, assets, technology and skills provide a competitive advantage and affects the organizations performance. The competitiveness and productivity are not only hinged on the sources and costs of resources but also the technology embraced. Cutting edge technologies increase profitability and decrease

wastage thus making the organizations to compete competitively. Moreover, research has shown market competition is important and that value is added to fish and fishery products depending on the requirements of the different markets. Value addition is an expanding sector in the sea food processing industry especially in the export markets. The entry in to international markets also calls for policies that govern these processes. Elaborate policies also play a crucial role in the growth of these sectors hence they should be developed and communicated to all stakeholders.

# CHAPTER THREE

## RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter outlines the research design and methodology that was used to carry out the study. The chapter also deals with the target population, type of data collected, sampling frame, sample and sampling technique, the sample size, data collection procedures, pilot test, validity and reliability of the instrument as well as the data analysis techniques and how eventually data was presented.

### 3.2 Research Design

This study adopted a cross-sectional survey research design aimed at collecting large number of qualitative and quantitative data at a point in time so as to establish patterns of value addition in the sea food industry. A cross-sectional survey research design enables collection of data about given phenomena within a limited time horizon which can help describe incidences of events or provide an explanation of factors related to an organization (Saunders, Lewis, and Thornhill, 2009). A cross-sectional survey research design was useful in overcoming time and budget constraints (Cooper and Schindler, 2013). Survey design has the advantages of being cost effective per respondent as compared to other methods; it employs an easier method of data collection; it enables the researcher to have a much larger sample size that could even range into thousands hence enhancing the accuracy of the conclusions arrived at. Finally, due to anonymity, respondents become more candid hence improving the accuracy of the data obtained.

### 3.3 Target population

Population refers to the entire group of people or things of interest that the researcher wishes to investigate, Sekaran (2010). There are 17 industrial fish processing firms in Kenya (EPZA, 2005 & Afipek, 2012). The target population of this study was 1270 officers where 850 of them were drawn from the IFPs, 300 from the Ministry of fisheries and 120 from KMFRI. Responses were given by officers that were involved in value addition, for example those that were involved in the process of filleting, skinning, trimming, packaging as well as freezing and storage. In addition, decision makers in the regulatory organizations such as those working under the Ministry of Fisheries, Kenya

Marine Fisheries Research Institute, with specific bias to value addition were also targeted in this study to give a comprehensive picture of the whole chain as presented in table 3.1. These officers represented the unit of analysis for the study.

**Table 3.1 Target Population**

| Stratum | Target population | percentage |
|---------|-------------------|------------|
| IFPs | 850 | 67 |
| Ministry of Fisheries | 300 | 24 |
| KMFRI | 120 | 9 |
| **Total** | **1270** | **100** |

## 3.4 Sampling Frame

The sampling frame describes a list of all population units from which the sample was selected (Cooper & Schindler, 2013). It is a physical representation of the target population and comprises all the units that are potential members of a sample (Kothari, 2013). The sampling frame of this study was the 17 industrial fish processing firms in Kenya (EPZA, 2005 & Afipek, 2012).

## 3.5 Sampling Technique and Sample Size

The survey made use of stratified random sampling technique in order to achieve its purpose. This is because the respondents required for the completion of this survey had to be knowledgeable in the area of value addition in the sea food industry. In this case, the stratum comprised officers in these organizations that were involved in the process of value addition. The advantage of this method is that it gives the assurance of equitable distribution of wanted population characteristics through the selection of persons from the strata list (Hitzig, 2004; Brusco, 2012). Kerlinger (1986) indicates that a sample size of 10% is large enough so long as it allows for reliable data analysis and allows testing for significance of differences between estimates. Therefore, a proportionate sample size of approximate 127 respondents which is a 10% of the population was selected using stratified random sampling technique. The table below shows the target population and the sample size for the three strata's namely, IFPs, Ministry of fisheries and KMFRI.

**Table 3.2 Sample size determination**

| Stratum | Target population | Sample size | Percentage |
|---|---|---|---|
| IFPs | 850 | 85 | 10% |
| Ministry of Fisheries | 300 | 30 | 10% |
| KMFRI | 120 | 12 | 10% |
| Total | 1270 | 127 | 10% |

## 3.6 Data Collection Instrument

This section outlines the methods used to collect primary data which was a questionnaire. It also indicates the method used to collect secondary data for the study.

### 3.6.1 Primary Data

The primary research data was collected using a semi-structured questionnaire. Items in the questionnaire were arranged in a logical sequence according to the themes being studied and items that would elicit similar responses being grouped together.

The questionnaire had both closed and open-ended, predetermined and standardized set of questions. These closed-ended questions were adopted since they are easier to analyze as they are in an immediate usable form, are easier to administer and are economical to use in terms of time and money (Mugenda & Mugenda, 2003). The open ended questions would give the respondents complete freedom of response in one's own words. The researcher hoped to access greater depth of responses from these open-ended questions since the respondents' responses could give an insight into their feelings, background, hidden motivation, interests and decisions (Mugenda & Mugenda, 2003).

The semi-structured questionnaire was administered to the key decision makers of value addition in the IFPs and regulatory institutions namely KMFRI and the Ministry of Fisheries. The researcher also conducted a detailed desk study of various literatures including, government reports on fish farming, reports from the Kenya fish processors and exporters Association (AFIPEK).

The questionnaire consisted of three main sections. The first part, section A covered background information of the target population. The second part, Section B focused on

the strategic management determinants of value addition in the sea food processing sub-chain: strategic planning, technological competiveness, market competition and corporate policies in place as the independent variables. In section C, value addition in the Industrial Fish processing firms as the dependent variable. Likert-type scale that ranges from 1 (strongly disagree) to 5 (strongly agree) was used to quantify the responses to questions in section B and section C since they are relatively easy to develop and use.

## 3.6.2 Secondary Data

Secondary data was obtained from literature sources through review of published literature such as journals, articles, published theses and text books. The researcher also made use of secondary data from the Ministry of Fisheries, KMFRI records. These sources were reviewed to give insight in the search for the primary information.

## 3.7 Data Collection Procedure

Data collection focused on the main objectives of the study, so as to furnish the study with data that would be both adequate and objective. Data collection entailed use of the semi structured questionnaire. The questionnaires were served to respondents through drop and pick method. The researcher administered the questionnaires with the help of research assistants for any clarification to be made. The Data collection period took longer than expected since most of the IFPs had closed because of the rainy season.

## 3.8 Pilot Study

Cooper and Schindler (2013) indicated that a pilot test is conducted to detect weakness in design and instrumentation and to provide proxy data for selection of a probability sample. Pilot testing provides an opportunity to detect and remedy a wide range of potential problems with an instrument. By conducting a Pilot testing it ensured that appropriate questions were asked, the right data was collected, and the data collection methods worked. A pilot study was undertaken on 28 respondents to test the reliability and validity of the questionnaire. The rule of the thumb is that 1% of the sample should constitute the pilot test (Cooper & Schindler, 2013, Creswell, 2013). The proposed pilot test was within the recommendation.

### 3.8.1 Reliability

Testing of the reliability of the scale is very important as it shows the extent to which a scale produces consistent results if measurements are made repeatedly. This is done by determining the association in between scores obtained from different administrations of the scale. If the association is high, the scale yields consistent results, thus it is reliable. Cronbach's alpha was used to determine the internal reliability of the questionnaire used in this study. Values ranges between 0 and 1.0; while 1.0 indicates perfect reliability, the value 0.70 is deemed to be the lower level of acceptability (Hair, Black, Barry, Anderson, & Tatham, 2006).

### 3.8.2 Validity

Validity is the degree to which results obtained for the analysis of the data actually represent the phenomena under study. It indicates how accurate the data obtained in the study represent the variables of the study (Mugenda & Mugenda, 2003). The researcher used the most common internal consistency measure known as cronbach alpha (α). It may be mentioned that its value varies from 0 to 1 but, satisfactorily value is required to be more than 0.6 for the scale to be reliable. (Malhotra, 2002; Cronbach, 1951). The recommended value of 0.7 was used as a cut off of reliability.

### 3.9 Data Analysis and Presentation

Qualitative as well as quantitative methods of data analysis were used to analyze the research variables. A likert scale was adopted to provide a measure for qualitative data. The scale helped to minimize the subjectivity and made it possible to use quantitative analysis. The numbers in the scale were ordered such that they indicated the presence or absence of the characteristic to be measured (Mugenda & Mugenda, 2003).This mix of tools was necessary because whereas some aspects of the study were qualitative others were of quantitative nature.

### 3.9.1 Qualitative Analysis

In qualitative studies, the researcher was interested in analyzing information in a systematic way in order to come to useful conclusions and recommendations. In qualitative studies, researchers' obtained detailed information about the phenomena being studied, and then tried to establish patterns, trends and relationships from the information gathered. Qualitative aims at providing basic information without proof of it. Before processing the responses, data preparation was done on the completed questionnaire by editing, coding, entering and cleaning the data. Data collected was analyzed using descriptive statistics. The descriptive statistical tools helped in describing the data and determining the respondents' degree of agreement with the various statements under each factor. Data analysis was done with the help of SPSS version 20.0.

### 3.9.2 Quantitative Analysis

Whereas qualitative analysis aims at providing basic information, quantitative analysis goes further to test the theories in the theoretical framework behind the study and prove or disapprove it. For this kind of a study, there is need to go further and test hypothesis. The multiple regression analysis was used to explore the relationship between strategic planning activities, technological competiveness, market competition and corporate policies as the independent variables and value addition in the Industrial Fish processing firms as the dependent variable. Pearson's product moment correlation analysis was also used and it's a powerful technique for exploring the relationship among variables. Correlation coefficient was used to analyze the strength of the relations between variables. Correlation coefficients were calculated to observe the strength of the association. A series of multiple regression analysis (standard and step wise) were used because they provide estimates of net effects and explanatory power. Analysis of variance (ANOVA) was used to test the significance of the model. $R^2$ was used in this research to measure the extent of goodness of fit of the regression model. The regression model is indicated as shown as follows: $Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + e$

Where:-

$Y$ = represents the dependent variable, Value addition

$\beta_{0...}\ \beta_4$ are the Regression Coefficient

$X_1$ = Strategic Planning practices

$X_2$ = Technological Competiveness

$X_3$ = Level of Market Competition

$X_4$ = Corporate Policies

$e$ = Stochastic term

### 3.9.3 Variable definition and measurement

The relationships between variables are of great interest to researchers. Variables can be both independent and dependent. In the research process, the independent variables are used to predict the relationship with the dependent variable. The two key variables examined in this study are independent variables (strategic planning practices, technological competitiveness, level of market competition and corporate policies) and the dependent variable is value addition.

**Strategic planning:** this is the independent variable and was measured using eight items. Strategic planning practices was defined as the process of strategy formulation that entails making decisions with regard to the organizations' vision, objectives and strategies that relate to value addition. The researcher used a five point likert scale (with 5 = Strongly Agree, to 1 = Strongly Disagree).

**Technological competitiveness:** this is one of the independent variables and was measured using five items. Technological competitiveness was defined as the ability to provide leading edge technical capabilities and superior performance by embracing cutting edge technologies that enhance quality, helps in value addition, detects decomposition and extends product shelf life while adding minimal cost. The researcher used a five point likert scale (with 5 = Strongly Agree, to 1 = Strongly Disagree).

**Market competition:** this was measured using five items to determine the level of market competition. The researcher used a five point likert scale (with 5 = Strongly Agree, to 1 = Strongly Disagree). Competition focused on the position level in the market channel where the IFPs can sell their products and compete competitively.

**Corporate policies:** this was measured using five items, the researcher used a five point likert scale (with 5 = strongly agree). Corporate policies focused on the Laws, policies and regulatory framework that govern the industry in terms of value addition and operations of the IFPs.

**Value addition:** this was measured using eight items on the questionnaire and it was define as any additional activity that in one way or the other changes the nature of the final sea food product, thus adding value at the time of sale, either by skinning, trimming, filleting, packaging as well as freezing and storage. The researcher used a five point likert scale (with 5 = strongly agree).

# CHAPTER FOUR

## RESEARCH FINDINGS AND DISCUSSION

### 4.1 Introduction

In this chapter, raw data from the questionnaires was analyzed and interpreted. Various tests were used to test the relationship between variables, level of significance, reliability and random distribution of data. Specifically, we used Cronbach's alpha test, descriptive statistics test, Pearson Bivariate correlation and Multiple Regression analysis (standard and stepwise). The independent variables of the study were strategic planning practices, technological competitiveness, market competition and corporate policies and how they affected the dependent variable which was value addition in the industrial fish processing firms in Kenya.

### 4.2 Response Rate

From the data collected, out of the 127 questionnaires administered, 93 were filled and returned, which represent 73.22 % response rate. This response rate is considered satisfactory to make conclusions for the study. Mugenda and Mugenda (2003) observed that a 50% response rate is adequate, 60% is good, while 70% rated very good. This implies that based on this assertion, the response rate in this case of 73.22% is therefore very good. The recorded high response rate can be attributed to the data collection procedures for instance, the researcher pre-notified the potential participants for the survey, the researcher administered the questionnaire with the help of research assistants through drop and pick method and follow up calls were also made to clarify queries as well as to prompt the respondents to fill the questionnaire. These methods facilitated the whole process of data collection hence the high response rate.

### 4.3 Reliability and Validity

Prior to exploring and describing the relationship between strategic planning practices, technological competitiveness, market competition, corporate policies, and value addition of industrial fish processing firms in Kenya, the measures were examined and assessed to gauge reliability and validity.

### 4.3.1 Reliability analysis

Cronbach's alpha was used to determine the internal reliability of the questionnaire used in this study. Values ranges between 0 and 1.0; while 1.0 indicates perfect reliability, the value 0.70 is deemed to be the lower level of acceptability (Hair, Black, Barry, Anderson, & Tatham, 2006). The reliability statistic for each of the identified factors is presented in Table 4.1. It is evident from Table 4.1 that Cronbach's alpha for each of the identified factors is well above the lower limit of acceptability of 0.70. The findings indicated that strategic planning practices had a coefficient of 0.775, technological competitiveness had a coefficient of 0.718, level of market competition had a coefficient of 0.765, corporate policies had a coefficient of 0.762 and value addition obtained a coefficient of 0.734. The results indicate that the questionnaire used in this study had a high level of reliability. These tables indicate that each of the items relates to the identified factor and that the coefficient alpha value of the identified factor will not increase if some of the items are left out. Basically, reliability coefficients of 0.7 or more are considered adequate for social studies (Hair, Black, Barry, Anderson, & Tatham, 2006; Malhotra, 2002).

**Table 4.1: Reliability Statistics**

| Variables | Cronbach's Alpha | Comments |
|---|---|---|
| Strategic planning practices | 0.775 | Accepted |
| Technological competitiveness | 0.718 | Accepted |
| Level of market competition | 0.765 | Accepted |
| Corporate policies | 0.762 | Accepted |

### 4.3.2 Validity

Factor analysis was used to check validity of the constructs. Kaiser-Mayor-Oklin measures of sampling adequacy (KMO) & Bartlett's Test of Sphericity is a measure of sampling adequacy that is recommended to check the case to variable ratio for the analysis being conducted. In most academic and business studies, KMO & Bartlett's test play an important role for accepting the sample adequacy. While the KMO ranges from 0 to 1, the world-over accepted index is over 0.5. Also, the Bartlett's Test of Sphericity relates to the

significance of the study and thereby shows the validity and suitability of the responses collected to the problem being addressed through the study. For Factor Analysis to be recommended suitable, the Bartlett's Test of Sphericity must be less than 0.05.

The study applied the KMO measures of sampling adequacy and Bartlett's test of sphericity to test whether the relationship among the variables has been significant or not as shown in below in table 4.2. Factor 1 was based on eight items that represented strategic planning practices; Factor 2 was based on five items that represented technological competition, Factor 3 was based on three items that represented market competition, Factor 4 with four items represented corporate policies and Factor 5 with eight items represented value addition. The Kaiser-Mayor-Oklin measures of sampling adequacy shows the value of test statistic as 0.537, which is greater than 0.5 hence an acceptable index. While Bartlett's test of sphericity shows the value of test statistic as 0.000 which is less than 0.05 acceptable indexes. This result indicates a highly significant relationship among variables.

**Table 4.2: Factor analysis -KMO and Bart**

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .537 |
| | Approx. Chi-Square | 76.334 |
| Bartlett's Test of Sphericity | df | 10 |
| | Sig. | .000 |

## 4.4 Descriptive Statistics

This section outlines the demographic data, gender, years of existence and key players in the industry.

## 4.4.1 Demographic data

The study sought to establish the demographic data of the respondents. The researcher begun by a general analysis on the demographic data obtained from the respondents which

included; the gender, duration of existence and the key players in the industry. This research targeted 127 participants in regard to establishing the effects of strategic management determinants on value addition of the IFPs and 93 questionnaires were generated.

## 4.4.2 Gender distribution

The descriptive statistics of the study indicated that 78 (83.9%) of the respondents were men while the remaining 15 (16.1%) were women, this clearly shows that the industry is male dominated as indicated in table 4.3

**Table 4.3 Gender of respondents**

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Male | 78 | 83.9 |
| Female | 15 | 16.1 |
| **Total** | **93** | **100.0** |

## 4.4.3 Years of existence

From the table 4.4, shows that 45 (48.4%) of IFPs have been in existence for at least 10-15 years, 30 (32.3%) have been in existence for 1-5 years and 18 (19.4%) have been in existence for 5-10 years. These results are consistent with Visvanathanm et al, (2006), who states that fishing and fish farming has emerged as one of the major food processing occupations of mankind and in ancient times economically and socially backward people were employed in this profession. This clearly indicates that majority of the IFPs have been there for long.

**Table 4.4 Years of existence**

| Duration | Frequency | Percentage |
|----------|-----------|------------|
| 1-5 years | 30 | 32.3 |
| 5-10 years | 18 | 19.4 |
| 10-15 years | 45 | 48.4 |
| **Total** | **93** | **100.0** |

### 4.4.4 Key players in the industry

The descriptive statistics of the study indicated that there are numerous players in the industry. Most of the respondents 24 (25.8%) highlighted the Ministry of Fisheries as one of the key players, 21 (22.6%) indicated KEBs, 18 (19.4%) of the respondents highlighted the agents and KMFRI as other players and processors obtained 12 (12.9%). These results show respondents' opinion and the key players in the industry.

**Table 4.5 Key players in the Industry**

| Organization | Frequency | Percentage |
|--------------|-----------|------------|
| Ministry of Fisheries | 24 | 25.8 |
| KEBs | 21 | 22.6 |
| Agents | 18 | 19.4 |
| KMFRI | 18 | 19.4 |
| Processors | 12 | 12.9 |
| **Total** | **93** | **100.0** |

## 4.5 Study variables Findings

The following presents the findings on the various study variables.

### 4.5.1 Strategic planning practices on value addition

The study sought to investigate the effects of strategic planning practices on value addition. Table 4.6 summarizes respondents' level of agreement on how strategic planning practices affect value addition. Most of the respondents agreed that the vision of the organization was clear and coherent as shown by a mean of 4.32. Most of the respondents also agreed to the fact that their values and that of the organizations' were similar, reporting a mean of 4.19. Strategies on value addition reported a mean of 4.00.

**Table 4.6 Strategic planning on Value Addition**

| Statement | n | Mean | S.D |
|---|---|---|---|
| The vision is clear and coherent | 93 | 4.32 | .645 |
| The mission is clear and it inspires commitment | 93 | 3.97 | .744 |
| The goals are realistic and attainable | 93 | 3.65 | 1.129 |
| My values and organization values are similar | 93 | 4.26 | .569 |
| Strategic decision on value addition is participative | 93 | 3.94 | .567 |
| Organizational objectives are clear and coherent in V.A | 93 | 4.19 | .696 |
| Strategies on V.A exist in the organization | 93 | 4.00 | .766 |
| Employees are consulted on V.A and their suggestions incorporated in the decision making process | 93 | 3.61 | .909 |

### 4.5.2 Technological competitiveness on value addition

The study sought to establish the effects of technological competitiveness on value addition. From the findings indicated in table 4.7 most of the respondents agreed that the individuals' knowledge and technological base on value addition had increased with a

mean of 4.10 being obtained. These results are consistent with the findings obtained on the question on whether management works to develop training programs that enhance employee perfomance and thus improving on their technological skills on value addition. This question obtained a mean of 4.10, which shows that training programs exist in most of these IFPs especially on ways in which they can enhance their performance. The results also conquer with the findings on the question that was asked whether the staff have qualified technical skills and experience in value addition. The findings on this question obtained a mean of 4.03. This indicates consistency in the findings since, if the organization develops training programs for them, we expect these staff to have adequate technical skills and thus there will be an increase in kowledge and technological base on value addiition over the years. The findings on use of modern technology and the technology in place helps them to be competitive obtain a mean of 3.81 and 3.74 respectively

**Table 4.7 Technological Competitiveness on Value Addition**

| Statement | n | Mean | S.D |
| --- | --- | --- | --- |
| We use modern technology in V.A | 93 | 3.81 | .595 |
| My IFP has qualified professional staff with sophisitcated technical skills and expereince in V.A | 93 | 4.03 | .865 |
| The individual's knowledge and technological base on V.A in the organization has increased | 93 | 4.10 | .968 |
| The technology in place helps us to beat our competitors | 93 | 3.74 | 1.141 |
| The management works to develop training programs to enhance employees perfomance and improve technological skills in V.A | 93 | 4.10 | .822 |

### 4.5.3 Market Competition on Value Addition

The study sought to establish the effects of market competition on value addition. Respondents agreed that market competition played a crucial role in value addition as depicted by a mean of 4.22, most of the respondents agreed that the government played a role in linking them to international markets as depicted by a mean of 4.20 and a mean of 4.16 was obtained on the question whether value is added to fish and fishery products depending on the requirement of different markets. The study is in consistent with findings of Okisegere, (2012) in the study value chain management practices and cometitive advantage which obtained a mean of 4.3 on access of market information.

**Table 4.8: Market Competition on Value Addition**

| Statement | n | Mean | S.D |
|---|---|---|---|
| Competition has influenced V.A activities | 93 | 3.87 | .947 |
| We have strategic competitive advantage over our competitors | 93 | 3.06 | .953 |
| Value is added to fish and fishery products depending on the requirement of different markets | 93 | 4.16 | .727 |
| Market competition plays a crucial role in V.A | 93 | 4.22 | .750 |
| The government plays a role in linking us to the international markets | 93 | 4.20 | .760 |

### 4.5.4 Corporate Policies on Value Addition

The study sought to establish the effects of corporate policies on value addition. Most agreed that the operating rules and standard procedures played an important role in how decisions on value addition were handled obtaining a mean score of 4.10. The other questions that were asked, there seemed to be similar findings on the legal, regulatory and institutional framework on value addition being supportive and policies on value addition existing in the organization. All the three questions obtained a mean of 3.65. This indicates

that there is need for the organizations to review the aspect of policies since majority of the respondents were all reporting that the policies are there but there is need for further improvement on the same. A mean of 3.62 was obtained on the question if the government had established agreements and protocols to enhance the growth of the sea food industry. This is also another area of focus that can be emphasized on. The results are in agreements with the literature review that states that the Kenya fisheries sector has operated without a comprehensive fisheries policy since independence (RoK, 2005).

**Table 4.9: Corporate Policies on Value Addition**

| Statement | n | Mean | SD |
|---|---|---|---|
| The legal and regulatory framework on V.A is supportive | 93 | 3.65 | .789 |
| The institutional framework on V.A is supportive | 93 | 3.65 | .702 |
| Operating rules and standard procedures play important role in how decisions on V.A are handled | 93 | 4.10 | .693 |
| The government has established agreements and protocols to enhance growth of the sea food industry | 93 | 3.62 | .896 |
| Policies on V.A exist in our organization | 93 | 3.65 | .789 |

### 4.5.5. Value Addition

A number of questions were asked to determine how value addition was conducted in the IFPs. Respondents agreed that value addition processes generate further employment and currency earnings obtaining a mean of 4.39. These findings are in agreement with the literature review findings that indicate that at least 80,000 people work as fishers and fish farmers. The sector also provides livelihoods for about 2.3 million Kenyans involved mainly in fish processing and trade (RoK, 2008).

**Table 4.10: Value Addition**

| Statement | n | Mean | SD |
|---|---|---|---|
| Value is added to fish and fishery products depending on the requirement of different markets | 93 | 4.29 | .636 |
| There is a wide array of products that lead to customer satisfaction | 93 | 3.42 | 1.077 |
| V.A processes generate further employment and hard currency earnings | 93 | 4.39 | .660 |
| IFP produce tailor-made fish products ready to eat or those that require little preparation before serving to meet dynamic societal changes | 93 | 3.52 | 1.167 |
| IFP produce products that have a long shelf life and those that retain a desirable quality and nutritional value | 93 | 3.90 | 1.094 |
| Local cultures affect the effectiveness of V.A | 93 | 4.16 | .811 |
| There is a negative attitude towards fish consumption among some communities in Kenya | 93 | 3.77 | 1.044 |
| Low entrepreneurial culture among fishermen inhibit V.A | 93 | 4.29 | .774 |

The study further investigated whether value is added to fish and fishery products depending on the requirement of different markets. This question was repeated so as to check for consistency in the response a mean of 4.29 was obtained. In the market competition construct a mean of 4.16 was obtained and this indicates consistency in the findings. From the findings, IFPs needed to consider the market first before adding value to their products. The study further requested the respondents to indicate if low entrepreneurial culture among fishermen affected the value addition processes; a mean of 4.29 was obtained. Majority of the respondents agreed to the fact that low entrepreneurial culture inhibited value addition. This shows that there is need to equip the farmers on entrepreneurial skills.

## 4.6 Correlation Analysis

Pearson Bivariate correlation coefficient was used to compute the correlation between the dependent variable (value addition) and the independent variables (strategic planning, technological competitiveness, market competition and corporate policies). According to Sekaran (2008), this relationship is assumed to be linear and the correlation coefficient ranges from -1.0 (perfect negative correlation) to +1.0 (perfect positive relationship). The correlation coefficient was calculated to determine the strength of the relationship between dependent and independent variables (Kothari, 2013).

From table 4.11, the results generally indicate that except for strategic planning, other independent variables (technological competitiveness, market competition and corporate policies) were found to have positive significant correlations on value addition at 5% level of significance. There was a weak positive but insignificant correlation between strategic planning and value addition ($r = 0.188$, $P > 0.05$). There was a weak positive and significant correlation between technological competitiveness and value addition ($r = 0.220$, $P < 0.05$). There was a strong positive and highly significant correlation between market competition and value addition ($r = 0.564$, $P < 0.01$). There was a moderately strong positive and highly significant correlation between corporate policies and value addition ($r = 0.469$, $P < 0.01$). The results imply that technological competitiveness, market competition and corporate policies significantly influenced value addition of the industrial fish processing firms in Kenya.

**Table 4.11: Correlation Analysis**

|  |  | SP | TC | MC | CP | VA |
|---|---|---|---|---|---|---|
| **SP** | Pearson correlation | 1 |  |  |  |  |
|  | Sig. (2 tailed) |  |  |  |  |  |
|  | n | 93 |  |  |  |  |
| **TC** | Pearson correlation | .065 | 1 |  |  |  |
|  | Sig. (2 tailed) | .537 |  |  |  |  |
|  | n | 93 | 93 |  |  |  |
| **MC** | Pearson correlation | .419 | .196 | 1 |  |  |
|  | Sig. (2 tailed) | .000 | .059 |  |  |  |
|  | n | 93 | 93 | 93 |  |  |
| **CP** | Pearson correlation | .009 | .397 | .166 | 1 |  |
|  | Sig. (2 tailed) | .935 | .000 | .111 |  |  |
|  | n | 93 | 93 | 93 | 93 |  |
| **VA** | Pearson correlation | .188 | .220 | .564 | .469 | 1 |
|  | Sig. (2 tailed) | .072 | .034 | .000 | .000 |  |
|  | n | 93 | 93 | 93 | 93 | 93 |

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

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

## 4.7 Multiple Regression Analysis

Multiple regression analysis was performed to assess the relationship between the dependent variable (value addition) and the independent variables (strategic planning, technological competitiveness, market competition and corporate policies) and to test the research hypotheses on the strategic management determinants of value addition in the sea food processing sub chain in Kenya with specific focus on the industrial fish processors in Kenya. Standard multiple regression analysis was conducted for hypotheses testing (Cooper & Schindler, 2013; Sekaran, 2008), while stepwise multiple regression analysis was conducted in order to establish the best combination of independent (predictor) variables would be to predict the dependent (predicted) variable and to establish the best model of the study (Cooper & Schindler, 2013).

### 4.7.1 Standard Multiple Regression Analysis

In order to test the research hypotheses, a standard multiple regression analysis was conducted using value addition as the dependent variable, and the four strategic management determinants of value addition: strategic planning, technological competitiveness, market competition and corporate policies as the predicting variables. Tables 4.12, 4.13 and 4.14 present the regression results. From the model summary in table 4.11, it is clear that the adjusted $R^2$ was 0.441 indicating that a combination of strategic planning, technological competitiveness, market competition and corporate policies explained 44.1% of the variation in the value addition of the industrial fish processing industries in Kenya.

**Table 4.12 Model Summary**

| Model | R | $R^2$ | Adjusted $R^2$ |
|-------|------|-------|----------------|
| 1 | 0.682 | 0.465 | 0.441 |

From the ANOVA table 4.13, it is clear that the overall standard multiple regression model (the model involving constant, strategic planning, technological competitiveness, market competition and corporate policies) is significant in predicting how strategic planning, technological competitiveness, market competition and corporate policies determine value addition of the industrial fish processing industries in Kenya. The regression model achieves a high degree of fit as reflected by an $R^2$ of 0.465 (F = 19.1; P = 0.001 < 0.05).

**Table 4.13 Analysis of Variance**

| | | ANOVA | | | |
|------------|----------------|-----|----------------|--------|------|
| Model | Sum of squares | df | Mean square | F | Sig. |
| Regression | 12.899 | 4 | 3.225 | 19.114 | .000 |
| Residual | 14.847 | 88 | .169 | | |
| **Total** | **27.474** | **92** | | | |

Table 4.14 presents the regression results on how strategic planning, technological competitiveness, market competition and corporate policies determine value addition of the industrial fish processing industries in Kenya. The multiple regression equation was that: $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$ *and* the multiple regression equation became:

$Y = 0.988 - 0.034X_1 - 0.033X_2 + 0.430 X_3 + 0.442X_4$. As depicted in table 4.13, there was positive and significant effects of corporate policies on value addition ($\beta = 0.398$; t = 4.562; $p < 0.05$). There was positive and significant effects of market competition on value addition ($\beta = 0.518$; t = 5.885; $p < 0.05$). However, there was negative but insignificant effects of strategic planning on value addition ($\beta = -0.30$; t = -0.349; $p > 0.05$). There was negative but insignificant effects of technological competitiveness on value addition ($\beta = -0.037$; t = 0.436; $p > 0.05$).

**Table 4.14 Regression Coefficients**

| Model | Unstandardized coefficients | | Standardized coefficients | t | sig |
|---|---|---|---|---|---|
| | B | Std. error | Beta | | |
| (Constant) | .988 | .500 | | -.349 | .051 |
| Strategic planning | -.034 | .098 | -.030 | -.349 | .728 |
| Technological competitiveness | -.033 | .077 | -.037 | -.436 | .664 |
| Market competition | .430 | .078 | .518 | 5.885 | .000 |
| Corporate policies | .442 | .095 | .398 | 4.562 | .000 |
| *a. Dependent variable: Value addition* | | | | | |

### 4.7.2 Test of Hypotheses

As earlier stated, in order to test the research hypotheses stepwise multiple regression analysis was conducted using value addition as the dependent variable, and the four strategic management determinants of value addition: strategic planning, technological competitiveness, market competition and corporate policies as the predicting variables.

## 1. Hypothesis One

***HO$_1$:*** *Strategic planning has no significant effect on value addition in the IFPs in Kenya.*

***HA$_1$:*** *Strategic planning has a significant effect on value addition in the IFPs in Kenya.*

HO$_1$ postulates that strategic planning has no significant effects on value addition of the industrial fish processing industries in Kenya, while HA$_1$ postulates that strategic planning has significant effect on value addition of the industrial fish processing industries in Kenya. The results in table 4.15 provide support for HO$_1$ hence these results fail to reject the HO$_1$. Therefore, strategic planning was found to have insignificant effects on value addition ($\beta$ = -0.30; t = -0.349; p > 0.05).

## 2. Hypothesis Two

***HO$_2$:*** *Technological competitiveness has no significant effect on value addition in the IFPs in Kenya.*

***HA$_2$:*** *Technological competitiveness has a significant effect on value addition in the IFPs in Kenya.*

HO$_2$ postulates that technological competitiveness has no significant effects on value addition of the industrial fish processing industries in Kenya, while HA$_2$ postulates that technological competitiveness has significant effect on value addition of the industrial fish processing industries in Kenya. The results in table 4.15 provide support for HO$_2$ hence these results fail to reject the HO$_2$. Therefore, technological competitiveness was found to have insignificant effects on value addition ($\beta$ = -0.037; t = 0.436; p > 0.05).

## 3. Hypothesis three

***HO$_3$:*** *Market competition has no significant effect on value addition in the IFPs in Kenya.*

***HA$_3$:*** *Market competition has a significant effect on value addition in the IFPs in Kenya.*

HO$_3$ postulates that market competition has no significant effects on value addition of the industrial fish processing industries in Kenya, while HA$_3$ postulates that market competition has significant effect on value addition of the industrial fish processing industries in Kenya. The results in table 4.15 failed to provide support for HO$_3$ hence the HO$_3$ was rejected and instead the HA$_3$ was accepted. Therefore, market competition was found to have statistically significant effects on value addition ($\beta$ = 0.518; t = 5.885; p < 0.05).

### 4. Hypothesis four

$HO_4$: *Corporate policies have no significant effect on value addition in the IFPs in Kenya.*

$HA_4$: *Corporate policies have a significant effect on value addition in the IFPs in Kenya.*

$HO_4$ postulated that corporate policies has no significant effects on value addition of the industrial fish processing industries in Kenya, while $HA_4$ posited that corporate policies has no significant effects on value addition of the industrial fish processing industries in Kenya. The results in table 4.15 failed to provide support for $HO_4$ hence the $HO_4$ was rejected and instead the $HA_4$ was accepted. Therefore, corporate policies was found to have statistically significant effects on value addition ($\beta = 0.398$; $t = 4.562$; $p < 0.05$).

**Table 4.15: Summary of Regression Coefficient and Test of Hypothesis**

| Model | Standardized coefficients | t | sig | Deductions |
|---|---|---|---|---|
| | Beta | | | |
| (Constant) | | -.349 | .051 | |
| Strategic planning | -.030 | -.349 | .728 | *Fail to Reject $HO_1$* |
| Technological competitiveness | -.037 | -.436 | .664 | *Fail to Reject $HO_2$* |
| Level of market competition | .518 | 5.885 | .000 | *Reject $HO_3$* |
| Corporate policies | .398 | 4.562 | .000 | *Reject $HO_4$* |
| *a. Dependent variable: Value addition* | | | | |

These results of the standard multiple regression analysis in tables 4.12- 4.15 indicate that when the four independent variables are combined together, only corporate policies and market competition have positive significant effects on value addition of the industrial fish processing industries in Kenya. This necessitated the study to conduct step wise multiple regression analysis in order to establish the best combination of independent (predictor) variables would be to predict the dependent (predicted) variable and to establish the best model of the study (Cooper & Schindler, 2013).

### 4.7.3 Stepwise Multiple Regression Analysis

Stepwise multiple regression analysis was conducted in order to establish the best combination of independent (predictor) variables would be to predict the dependent (predicted) variable and to establish the best model of the study (Cooper & Schindler, 2013). In a stepwise regression, predictor variables are entered into the regression equation one at a time based upon statistical criteria. At each step in the analysis the predictor variable that contributes the most to the prediction equation in terms of increasing the multiple correlation, R, is entered first. This process is continued only if additional variables add anything statistically to the regression equation. When no additional predictor variables add anything statistically meaningful to the regression equation, the analysis stops. Thus, not all predictor variables may enter the equation in stepwise regression. Stepwise regressions revealed that two strategic management determinants of value addition including market competition and corporate policies explained statistically significant portion of the variance associated with the extent of value addition of the industrial fish processing industries in Kenya.

In order to establish the best regression model for the study, a stepwise multiple regression analysis was conducted using value addition as the dependent variable, and the two strategic management determinants of value addition: market competition and corporate policies as the predicting variables. Tables 4.15, 4.16 and 4.17 present the results of the stepwise multiple regression analysis.

From the model summary in table 4.16, it is clear that the adjusted $R^2$ was 0.451 indicating that a combination of the two strategic management determinants of value addition: market competition and corporate policies explained 45.1% of the variation in the value addition of the industrial fish processing industries in Kenya. This, therefore, implies that other strategic management determinants of value addition not included in this model explain 54.9% of the variation in the value addition of the industrial fish processing industries in Kenya. As such, further research should be conducted to investigate the other strategic management determinants of value addition not studied.

**Table 4.16: Model Summary of Stepwise Multiple Regression**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .680[a] | .463 | .451 | .407 |

*a. Predictors: (Constant), Market Competition, Corporate Policies*

From the ANOVA table 4.17 of the stepwise multiple regression analysis, it is clear that the overall stepwise multiple regression analysis model (the model involving constant, market competition and corporate policies) is significant in predicting how market competition and corporate policies determine value addition of the industrial fish processing industries in Kenya. The regression model achieves a high degree of fit as reflected by an $R^2$ of 0.463 (F = 38.797; P = 0.001 < 0.05).

**Table 4.17: ANOVAa of Stepwise Multiple Regression**

| | Model | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 12.847 | 2 | 6.423 | 38.797 | .000[b] |
| 1 | Residual | 14.900 | 90 | .166 | | |
| | Total | 27.747 | 92 | | | |

*a. Dependent Variable: Value Addition Mean*

*b. Predictors: (Constant), Market Competition, Corporate Policies*

Table 4.18 presents the regression results on how market competition and corporate policies determine value addition of the industrial fish processing industries in Kenya. As depicted in table 4.17, there is statistically positive significant effects of corporate policies on value addition ($\beta = 0.386$; $t = 4.927$; $p < 0.05$) and statistically positive significant effects of market competition on value addition ($\beta = 0.500$; $t = 6.382$; $p < 0.05$). These results indicate that when the two strategic management determinants of value addition: market competition and corporate policies are combined together; they explained statistically significant portion of the variance (R square = 0.463) associated with the extent of value addition of the industrial fish processing industries in Kenya.

Therefore, the best econometric model for this study was: $Y = \beta_0 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$, where $Y$ = represents Value addition (the dependent variable), $\beta_0 =$ intercept, $\beta_3$ = regression coefficient of market competition, $\beta_4$ = regression coefficient of corporate policies, $X_3 =$ market competition, $X_4 =$ corporate policies and $e =$ stochastic term, which then becomes $Y = 0.825 + 0.415X_3 + 0.429X_4$. The best model for this study has established that taking all factors into account (market competition and corporate policies) constant at zero, value addition will be 0.825. The result has further established that taking all other independent variables at zero, a unit increase in market competition will lead to 0.415 increases in value addition. The results has further established that taking all other independent variables at zero, a unit increase in corporate policies will lead to 0.415 increase in value addition.

The stepwise multiple regressions indicates that among the strategic management determinants of value addition of the industrial fish processing industries in Kenya, market competition had an effect on improving value addition, followed by corporate policies. This result was an emphasis on the role of market competition and corporate policies in providing suitable environment for developing and improving value addition of the industrial fish processing industries in Kenya. Finally, this result was also so important for managers and other policy makers to find out how corporate policies and market competition could be modified in order to facilitate sustainable value addition of the industrial fish processing industries in Kenya.

**Table 4.18 Coefficients of Stepwise Multiple Regression**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| | (Constant) | .825 | .374 | | 2.205 | .030 |
| 1 | Corporate Policies | .429 | .087 | .386 | 4.927 | .000 |
| | Market Competition | .415 | .065 | .500 | 6.382 | .000 |

*a. Dependent Variable: Value Addition*

## 4.8 Discussion of the Key Findings

This section discusses the research findings presented in the previous section based on the objectives and hypotheses of the study. The general objective of the study was to assess the effects of strategic management determinants on value addition in the sea food processing sub-chain in Kenya with specific focus of the industrial fish processing firms in Kenya. The variables under study were strategic planning practices, technological competitiveness, market competition and corporate policies.

### 4.8.1 Effects of Strategic Planning on Value Addition

Pearson Bivariate correlation was used to compute the correlation between strategic planning and value addition. The findings indicated that there was a weak positive but insignificant correlation between strategic planning and value addition ($r = 0.188$, $P > 0.05$). Standard multiple regression was conducted and there was negative but insignificant effects of strategic planning on value addition ($\beta = -0.30$; $t = -0.349$; $p > 0.05$). On hypothesis testing, standard multiple regression analysis was carried out and the results provided support for $HO_1$ hence these results fail to reject the $HO_1$. Contrary to previous studies (Kaplan & Beinhocker, 2003; Kraus, Harms & Schwarz, 2006; Mc Carthy, 2003), strategic planning was found to have insignificant effects on value addition ($\beta = -0.30$; $t = -0.349$; $p > 0.05$). (Kraus, Harms & Schwarz, 2006) by Strategic planning is generally accepted to be positively related to a firm's performance. Their findings were that strategic

planning is commonly characterized by the length of time of the planning process, the formalization of the planning process and the presence of and frequency of evaluations and controls (Kraus *et al*, 2006). Strategic management practices of small firms in emerging industries relied primarily on the characteristics of the founder who acts on instincts, intuitions and impulse (Mc Carthy, 2003). Many small firms operate informally (Mc Carthy, 2003) using loosely defined strategies with founders managing the process in a way that is different from the standard strategic management models documented in the theory. From the literature review we realize that planning is a good management practice, and may be beneficial to business (Gibson et al 2002; Schwenk and Shrader, 1993). According to Berman, Gordon and Sussman (1997), firms that plan produce better financial results than firms that do not plan. Bracker et al (1986; 1988) found that firms that undertook strategic planning performed better financially. Lerner and Almor (2002) contend that planning lays the groundwork for developing the strategic capabilities needed for high performance. A study conducted by Kaplan and Beinhocker (2003) on 80 companies and their strategic planning process found out that strategic planning can indeed is a source of competitive advantage.

### 4.8.2   Technological Competitiveness on Value Addition

Pearson Bivariate correlation was used to compute the correlation between technological competiveness and value addition. The results indicated that there was a weak positive and significant correlation between technological competitiveness and value addition ($r = 0.220$, $P < 0.05$). The result is consistent with that of Ogolla and Wanjau (2013) which found a positive significant correlation between value addition and technology in the leather industry. On the standard multiple regression, there was negative but insignificant effects of technological competitiveness on value addition ($\beta = -0.037$; $t = 0.436$; $p > 0.05$). These findings are consistent with the findings of Bowonder, Sadulla, and Jain (2009) who suggested that the leather industry should capture the traditional knowledge and integrate it with new knowledge. On hypothesis testing, standard multiple regression analysis was used and it indicated that the results provided support for $HO_2$ hence these results failed to reject the $HO_2$. Therefore, technological competitiveness was found to have insignificant effects on value addition ($\beta = -0.037$; $t = 0.436$; $p > 0.05$). Bowonder, Sadulla, and Jain (2009) argued that shifting from traditional knowledge to new knowledge

base cannot occur spontaneously, it has to be through 'learning-by-doing', which requires a considerable amount of time.

### 4.8.3 Market Competition on Value Addition

Pearson Bivariate correlation was used to compute the correlation between market competition and value addition. The results indicated that there was a strong positive and highly significant correlation between market competition and value addition (r = 0.564, P < 0.01). On regression analysis, there was positive and significant effects of market competition on value addition (β = 0.518; t = 5.885; p < 0.05).  On hypothesis testing, the results failed to provide support for $HO_3$ hence the $HO_3$ was rejected and instead the $HA_3$ was accepted.  Therefore, consistent with Okisegere (2012) market competition was found to have statistically significant effects on value addition (β = 0.518; t = 5.885; p < 0.05). The study conducted by Okisegere (2012)  on value chain management practices and competitive advantage of sea food firms indicated that the major market regions for their seafood products was E.U accounting for  50% of the market share; the local market contributed 38.2% while the Asian market contributed 11.8% and none from the North American market. This clearly shows that market competition actually exists in the sea food industry and thus IFPs must strive to add value to their products so as to competitively fit in these markets. The state of competition in the seafood industry was reported to be very high 67% (Okisegere, 2012). The results obtained in this study were similar to what FAO reported that European Union was one of the largest world markets for seafood (FAO, 2010).

### 4.8.4 Corporate Policies on Value Addition.

Pearson Bivariate correlation was used to compute the correlation between corporate policies and value addition. The results indicated that there was a moderately strong positive and highly significant correlation between corporate policies and value addition (r =0.469, P < 0.01).  On regression analysis, there was positive and significant effects of corporate policies on value addition (β = 0.398; t = 4.562; p < 0.05). Hypothesis testing was also carried out using the standard multiple regression analysis and the results failed to provide support for $HO_4$ hence the $HO_4$ was rejected and instead the $HA_4$ was accepted. Therefore, corporate policies was found to have statistically significant effects on value

addition ($\beta = 0.398$; $t = 4.562$; $p < 0.05$). These findings are consistent with the results of Muthee (2008) which found that in Kenya, value addition in the leather sub-sector is well recognized in the national policies; however, putting this into practice was still a challenge. These findings are therefore encouraging, and those in charge of running the sea food industry should carry out awareness campaigns to enlighten the IFPs about the international market demands so that they can produce products which are internationally acceptable. The findings are consistent with various writers who have supported the need to develop elaborate policy and regulatory frameworks in order to grow economic sectors (Mwirigi, Mukulu, & Karanaja, 2011; Namusonge, 1999). As such, similar policies should be derived to deal with issues of value addition in the IFPs.

# CHAPTER FIVE

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

This chapter accordingly summarizes the findings in line with the objectives, draws conclusions and makes the necessary recommendations. Areas of further study that may enrich the study area are also suggested.

### 5.2 Summary of Findings

The general objective of this study was to investigate the strategic management determinants of value addition in the sea food processing sub chain in Kenya with specific focus of the industrial fish processors in Kenya. Specifically, this study investigated the effects of strategic planning practices, technological competitiveness, market competition and corporate policies on value addition of the industrial fish processors in Kenya. The study employed a survey research design in data collection. This research employed quantitative data collection method whereby data was gathered by the use of closed ended questionnaires which were self-administered. Factor analysis was used to assess the validity and Cronbach alpha to assess reliability of the questionnaire. Multiple regression analysis was performed to assess the relationship between the dependent variable (value addition) and the independent variables (strategic planning, technological competitiveness, market competition and corporate policies) and to test the research hypotheses on the strategic management determinants of value addition in the sea food processing sub chain in Kenya with specific focus on the industrial fish processors in Kenya.

Standard multiple regression analysis was conducted for hypotheses testing (Cooper & Schindler, 2013; Sekaran, 2008), while stepwise multiple regression analysis was conducted in order to establish the best combination of independent (predictor) variables would be to predict the dependent (predicted) variable and to establish the best model of the study (Cooper & Schindler, 2013). Results confirm the varying importance of the strategic management determinants in the sea food processing sub chain in Kenya. In general, the results reveal that market competition and corporate policies have significant and positive effects on value addition, while strategic planning and technological competitiveness have insignificant effects on value addition in the sea food processing sub

chain in Kenya especially with the industrial fish processors in Kenya. Stepwise regressions revealed that two strategic management determinants of value addition including market competition and corporate policies explained statistically significant portion of the variance associated with the extent of value addition of the industrial fish processing industries in Kenya. The study recommends that to improve value addition in the sea food processing sub chain in Kenya, managers of the industrial fish processors in Kenya should nurture and develop market competition and corporate policies.

## 5.3 Conclusions

Based on the findings of this study, the following conclusions were drawn. The results reveal that market competition and corporate policies have significant and positive effects on value addition, while strategic planning and technological competitiveness have insignificant effects on value addition in the sea food processing sub chain in Kenya specifically with the industrial fish processors in Kenya. These findings indicate that the existing strategic planning practices and technological competitiveness are not so suitable for improving value addition in different levels of the industrial fish processing firms in Kenya. The stepwise multiple regression analysis revealed that two strategic management determinants of value addition namely; market competition and corporate policies explained statistically significant portion of the variance associated with the extent of value addition of the industrial fish processing industries in Kenya. The stepwise multiple regressions indicated that among the strategic management determinants of value addition, market competition and corporate policies had more effects on improving value addition of the industrial fish processing industries in Kenya. This result was an emphasis on the role of market competition and corporate policies in providing a suitable environment for developing value addition of the industrial fish processing industries in Kenya.

## 5.4 Recommendations
Based on the findings of this study and the conclusions drawn, the following recommendations were made:

### 5.4.1 Managerial Recommendations
1. The existing strategic planning practices and technological competitiveness practices should be modified towards modern strategic planning practices and technological

competitiveness practices in order to improve value addition in the industrial fish processing firms in Kenya.

2. In modifying strategic planning practices, education programs on strategic planning for employees and managers should be given key priority in the industrial fish processing firms in Kenya.

3. In modifying technological competitiveness practices, the mangers of the industrial fish processing firms in Kenya should incorporate modern sea food processing value addition technologies for the success of the industry.

4. Managers of the industrial fish processing firms in Kenya should focus more on market competition and corporate policies in order to improve value addition.

5. Managers should find out how market competition and corporate policies strategies could be modified in order to facilitate value addition in the industrial fish processing firms in Kenya.

## 5.4.2 Policy Recommendations

1. Policy makers should find out how market competition and corporate policies strategies could be modified in order to facilitate value addition in the industrial fish processing firms in Kenya.

2. The government of Kenya should invest in appropriate technological infrastructure so that the industrial fish processing firms can improve on technological competitiveness.

3. Policy makers should decide on the mechanisms to encourage strategic planning in the industrial fish processing firms in Kenya.

4. In modifying strategic planning practices, the government should ensure that industrial fish processing firms in Kenya has a strategic plan that clearly documents their strategies in value addition.

5. In modifying technological competiveness, the government should create fishing ports in Mombasa, Kilifi, Lamu and other counties that are fitted with modern cooling equipment to avoid post-harvest losses by building cold chain facilities for value addition.

6. The government should ensure that the fisheries management bill of 2014 is adopted and implemented fully to create an enabling marine fishing environment for the local fisher men in the region.

7. The government should create linkages through their respective ministries in order to market the sector in various parts of the world.

8. The government should strengthen inter-sectorial relationships so as to tap into synergies that exist and would lead to growth of value addition in the two sectors.

9. The government should establish various information centers to furnish industrial fish processing firms in Kenya with necessary information for purposes of planning, investment and decision making.

10. The government should develop very clear and elaborate regulatory framework and policies so as to guide the operations of the industrial fish processing firms in value addition.

## 5.5 Areas for further research

The general objective of this study was to investigate the strategic management determinants of value addition in the sea food processing sub chain in Kenya with specific focus of the industrial fish processors in Kenya. Specifically, this study investigated the effects of strategic planning practices, technological competitiveness, market competition and corporate policies on value addition of the industrial fish processors in Kenya. These determinants are not exhaustive hence further research can be carried out to unearth other strategic management determinants of value addition in the industry. Secondly, further studies need to be carried out to identify industry based challenges that these industrial fish processing firms face and how best these challenges can be addressed to enhance growth and performance of the sector.

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# APPENDICES

## Appendix I: Research Questionnaire Cover Letter

Fridah Simba Theuri,

PhD Student

JKUAT Mombasa CBD, Mombasa.

Dear Respondent,

**RE: ASSISTANCE WITH STUDY FOR PHD RESEARCH PROJECT**

I am a PhD student at JKUAT. The assistance of your organization is requested in a study entitled *"Strategic management determinants of value addition in the sea food processing sub-chain: a Survey of Industrial Fish Processors in Kenya"*. This research project is a requirement for the **award of a PhD in Business Administration in Strategic Management of Jomo Kenyatta University of Agriculture & Technology.** Please take a few minutes to complete this questionnaire. Your specific answers will be completely anonymous, but your views, in combination with those of others, are extremely important. The information generated using this questionnaire will be treated confidentially and will not be in any way used against the respondent. The information obtained will be used purely for the intended academic purposes.

Yours faithfully,

Fridah Simba Theuri

E-mail: fridahtheuri@gmail.com / 0721-478609

**Appendix II: Research Questionnaire**

**Strategic management determinants of Value Addition in the Sea Food processing Sub-chain: A Survey of Industrial Fish Processors in Kenya.**

*Please fill this questionnaire openly and honestly. Confidentiality will be strictly adhered to, and there will be no mention of your personal name. Please provide the following information as required.*

**Section A: Background Information**

1.1 Please indicate your Position in the IFP……………………………………………

1.2 Please indicate your Gender

|  |  | *(Please mark in the appropriate box)* |
|---|---|---|
| 1. | Male | |
| 2. | Female | |

*1.3* How long has the IFP been in existence? *(please tick appropriately)*

| 1-5 years | |
|---|---|
| 5-10 years | |
| 10-15 years | |

1.4 Who are your main customers?.................................................................................

1.5 Please list the key players involved in the sea food value chain in Kenya

……………………………………………………………………………………………

……………………………………………………………........................................

*Provide the following information by ticking the **ONE** answer in the appropriate box you believe best describes your IFP as a whole.*

## Section B: Effects of existing Strategic Planning activities on Value Addition in the Sea Food Processing Sub- chain.

| 1. Existing Strategic Planning activities | | 1 Strongly Disagree | 2 Disagree | 3 Uncertain | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| 1.1 | The vision of the organization is clear and coherent. | | | | | |
| 1.2 | The organization's mission is clear, coherent and it inspires commitment. | | | | | |
| 1.3 | The goals are realistic and attainable especially in value addition | | | | | |
| 1.4 | I find that my values and the organizational values are very similar | | | | | |
| 1.5 | The strategic decision on value addition is participative. | | | | | |
| 1.6 | The organizational objectives are clear and coherent in value addition | | | | | |
| 1.7 | Strategies of value addition exist in our organization | | | | | |
| 1.8 | Employees are consulted on value addition and their suggestions incorporated in the | | | | | |

| | | 1<br>Strongly<br>Disagree | 2<br>Disagree | 3<br>Uncertain | 4<br>Agree | 5<br>Strongly<br>Agree |
|---|---|---|---|---|---|---|
| | decision making process | | | | | |

1.9 Do you have a strategic plan? -------- (yes / no)

1.10     Give reasons for the answer above

……………………………………………………………………………………………………………

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**Section C: Effects of Technological Competitiveness on Value Addition in the Sea Food Processing Sub-Chain.**

| 2 | Technological<br>Competitiveness | 1<br>Strongly<br>Disagree | 2<br>Disagree | 3<br>Uncertain | 4<br>Agree | 5<br>Strongly<br>Agree |
|---|---|---|---|---|---|---|
| 2.1 | We use modern technology in value addition | | | | | |
| 2.2 | My IFP has qualified professional staff with increasingly more sophisticated technical skills and experience in value addition. | | | | | |
| 2.3 | The individual's knowledge and technological base on value addition in this organization has increased. | | | | | |
| 2.4 | The technology in place helps us to beat our competitors | | | | | |
| 2.5 | The management | | | | | |

| | | 1 Strongly Disagree | 2 Disagree | 3 Uncertain | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| | works to develop training programs to enhance employee performance and improve their technological skills in value addition. | | | | | |

**Section D: Levels of market competition in the sector and its effects on Value Addition in the Sea Food Processing Sub-Chain.**

| 3 | Levels of market competition | 1 Strongly Disagree | 2 Disagree | 3 Uncertain | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| 3.1 | Competition has influenced our value addition activities | | | | | |
| 3.2 | We have strategic competitive advantage over our competitors | | | | | |
| 3.3 | Value is added to fish and fishery products depending on the requirement of different markets | | | | | |

3.4 Where do you sell your products? (tick appropriately)

☐                   ☐                   ☐

3.5 What products do you sell in the market stated above (give at least 3 products in terms of their demand)

……………………………………………………………………………………………

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3.6 Who are your main competitors *(name at least 2 main competitors)*

…………………………………………………………………………………………………

…………………………………………………………………………………………………

**Section E: Effects of Corporate Policies on Value Addition in the Sea Food Processing Sub-Chain.**

| 4 Corporate policies | | 1 Strongly Disagree | 2 Disagree | 3 Uncertain | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| 4.1 | The legal and regulatory framework on value addition is supportive. | | | | | |
| 4.2 | The institutional framework on value addition is supportive. | | | | | |
| 4.3 | Operating rules and standard procedures play important roles in how decisions on value addition are handled. | | | | | |
| 4.4 | The government has established agreements and protocols to enhance growth of the sea food industry | | | | | |

4.5 Do you think the government has been supporting the sea food sector in Kenya?

(tick appropriately) **(YES/ NO)**

4.6 Give reasons for the answer given above

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4.7 What kind of support would you want the government to render to the IFPs in

Kenya ?

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**Section F: Value Addition in the Industrial Fish Processors (IFPs).**

| | Value Addition | 1 Strongly Disagree | 2 Disagree | 3 Uncertain | 4 Agree | 5 Strongly Agree |
|---|---|---|---|---|---|---|
| 5.1 | Value is added to fish and fishery products depending on the requirement of different markets. | | | | | |
| 5.2 | There is a wide array of products that lead to customer satisfaction. | | | | | |
| 5.3 | Value addition processes generate further employment and hard currency earnings. | | | | | |
| 5.4 | The IFP produces tailor-made fish products ready to eat or requiring little preparation before serving to meet dynamic societal changes. | | | | | |
| 5.5 | The IFP processes products that have a long shelf life and that retain a desirable quality and nutritional value. | | | | | |
| 5.6 | Local cultures affect the effectiveness of value addition | | | | | |

| 5.7 | There is negative attitude towards fish consumption among some communities in Kenya | | | | | |
|-----|------|--|--|--|--|--|
| 5.8 | Low entrepreneurial culture among fishermen inhibit value addition of sea food | | | | | |

5.6 In what ways do you add value to raw sea food ?

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5.7 What challenges do you face in the process of value addition?

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………………………………………………………………………………………………

……………………………………………………………………………………………….

5.8 Kindly give any other comments that you feel were not captured in this instrument regarding value addition in the sea food industry:

_____

_____

_____

**Thank you for taking the time to complete this questionnaire**

## Appendix III: Main Fish Exporters from Kenya

| NO | NAME OF THE COMPANY | ADRESS |
|----|---------------------|--------|
| 1. | W.E Tilley (M) Ltd <br><br> (Nile Perch) <br><br> **Contact person : Mr. Zul Jessa** | P.O. Box 11880 Nairobi <br> Tel: 020 – 8562203/4 <br> Fax: 254-020-8562205/ 856293 <br> Email: zul@tilleygroup.com |
| 2. | East African Sea foods Ltd <br> (Nile Perch) <br> **Contact person : Mr. Karim Kurji** | P.O. Box 10271 Nairobi <br> Tel: 020-533355 <br> Fax: 020- 533236 <br> Website: www.alphaafrica.com |
| 3. | Basta & Sons Ltd <br> (Sea Fish) <br> **Contact person : Mr. Basta** | P.O. Box 80782, Mombasa. <br> Tel: 041- 2476128 <br> E mail: Basta@africaonline.co.ke |
| 4. | Ittica Ltd. <br> Boat (prawns, Fin Fish, Squid) <br> (Sea fish) <br> **Contact person : Mr. Basta** | P.O. Box 80782, Mombasa. <br> Tel: 041- 2311443 <br> E mail: |
| 5. | Prinsal Enterprises Ltd. <br> (Nile Perch) <br> **Contact person : Mr. Ms. Munira Gilani** | P.O. Box 32705, Nairobi <br> Tel: 020 -8561321/2 <br> Fax: 020 – 8561319 <br> E-mail: prinsalent@equanimity.net |
| 6. | Peche Foods Ltd. <br> (Nile Perch) <br> **Contact person : Mr. Basta** | P.O. Box 1064 Kisumu <br> Tel: 057- 2021523 <br> Fax: 057 -2021524 <br> E-mail: peche@swiftkisumu.com |
| 7. | Capital Fish (K) Ltd <br> (Nile Perch) <br><br> **Contact person : Mr. Alex** | P.O. Box 39358, Nairobi <br> Tel: 020 - 4348241/2 <br> Fax: 020-4348215 <br> E-mail: capitalfish1@gmail.com |

| | | |
|---|---|---|
| | **Trachtenberg** | |
| 8. | Fish Processors (2000) Ltd (Nile perch) | P.O. Box 32705, Nairobi<br>Tel: 020-8561321/2<br>Fax: 020- 8561319 |
| | **Contact person : Mr. Jahagir Tejani** | E-mail: kendag@wanachi.com |
| 9. | Samaki (2000) Ltd | P.O. Box 31567 Nairobi<br>Tel: 254-020-565712<br>Email: perch@africaonline.com |
| 10. | Wananchi Marine Products Ltd (Tuna) –can , oil | P.O. Box 81841 Mombasa<br>Tel: 041- 226484/ 226479<br>Fax: 041-227577<br>E mail: aoshaan@wanainchimarine.com |
| 11. | Trans Africa Fisheries Ltd (Octopus, Lobsters)<br><br>**Contact person :** | P.O. Box 80492 Mombasa<br>Tel: 041- 2493946/5267<br>Fax: 254-041-2495952/227406<br>E mail: seafood@tatfish.com |
| 12. | Sea Harvest Kenya Limited (Octopus)<br><br>**Contact person : Mr. Paolo Rocca** | P.O. Box 2175 Mombasa<br>Tel: 041- 2432575/ 2433236<br>Fax: 041-2433745<br>Email: paolo@sehak.com |
| 13. | Crustacean Ltd<br>**Contact person : Mr. Asaf Verjee** | P.O. Box 42507 Mombasa<br>Tel:<br>Fax:<br>E mail: crustacean@ikenya.com |
| 14. | Alpha Group<br> - Alpha Amboseli | P.O. Box 80443 |

| | | |
|---|---|---|
| | - Alpha Manyana | Mombasa |
| | - Alpha Serengeti | Tel: 041-227235/32 |
| | (3 companies ) – Sea food | Fax: 041-313407/316029 |
| | **contact person :** | www.alphaafrica.com |
| **15.** | East African deep fishing Ltd (MV sakoba)<br><br>**Contact person : Ms. Maum Jepchirchir** | P.O. Box 42507 Mombasa<br>Tel:<br>Fax:<br>E mail: naomi@eadf.co.ke |
| **16.** | J. Fish Ltd<br><br>**Contact person : Mr. Zul Jessa** | P.O. Box 11880 Nairobi<br>Tel: 020 – 8562203/4<br>Fax: 254-020-8562205/ 856293<br>Email: zul@tilleygroup.com |
| **17.** | Victoria Delight Ltd (Nile Perch)<br><br>**Contact person : Mr. Zul Jessa** | P.O. Box 11880 Nairobi<br>Tel: 020 – 8562203/4<br>Fax: 254-020-8562205<br>Email: zul@tilleygroup.com |

*Source: Kenya Fish Processors and Exporters Association, (2012*

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