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AN ASSESSMENT OF SMALL-SCALE FISH MARKETING IN ZIMBABWE

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
OF THE BACHELOR OF AGRICULTURAL SCIENCE HONOURS DEGREE IN
AGRICULTURAL ECONOMICS AND MANAGEMENT

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DECLARATION

I hereby declare that the research project entitled “**An assessment of small-scale fish marketing in Zimbabwe**” submitted to Bindura University of Science Education, Department of Agricultural Economics, Education and Extension is a record of an original work done by me under the guidance and supervision of Dr. L. Musemwa and this work is submitted in partial fulfilment of the requirements for the award of a Bachelor of Science Degree in Agricultural Economics and Management. The results obtained in this thesis have not been submitted to any University or Institute for the award of any degree or diploma.

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DEDICATION

This research project is dedicated to my family who gave me the support I so much needed to complete this research study.

ACKNOWLEDGEMENTS

I would like to thank God for giving me the strength and focus to do this project. I would like to express my sincere gratitude to my supervisor, Dr. L. Musemwa for the continuous support, motivation, patience and immense knowledge in carrying out this research study. I would like to acknowledge the farmers who responded to the questionnaires. Special thanks go to my family and friends for continuously supporting and believing in my dreams.

ABSTRACT

Aquaculture has recently gained momentum in the agricultural industry of Zimbabwe which resulted in significant rise in the number of farmers venturing into the enterprise due to its promotion by various stakeholders who include among others government departments and non-governmental organizations. The study's objectives were to evaluate the fish marketing channels, the criteria that small-scale fish farmers considered when selecting a fish marketing channel, and the margins associated with each of these channels. The study takes a look at assessment of the fish marketing channels in Zimbabwe. 117 fish traders were purposively sampled as the candidates for the study. Data was collected from the farmers using questionnaires. Inferential and descriptive statistics were used to analyse the data. Farmer to consumer, farmer to wholesaler, farmer to butcheries, farmer to food outlets, farmer to retailer shops and farmer to vendors or middleman are the channels that were found to be functional. To identify the variables influencing the marketing channel selection of fish traders, a binary model was used. Age, educational level, farm size, distance to market, method of payment, household size, and the presence of additional income sources were found to be statistically significant factors in influencing farmers' choice of marketing channel. From the study, it is evident that the marketing margins vary with the marketing channel used by the farmer. Most farmers market their fish in local markets which in most cases pay very low prices hence there is need to explore lucrative markets for fish so as to enhance the profitability of the enterprise. Fish farmers should also consider venturing into contract farming so that they access the required inputs and a ready market for their produce. The development of the cold chain within the industry must also be given high priority since fish is very perishable.

Keywords: Aquaculture, marketing channels, fish farmers, margins, tilapia fish

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Fish farming has acquired momentum in phrases of manufacturing performance in Zimbabwe, which is especially significant. This resulted from the advertising and marketing of fish farming and its consumption with the useful resource of authorities' departments, non-governmental groups, and other involved parties. The availability of severe water in our bodies and a big supply deficit of fish on the regional market coupled failure of without a doubt many agricultural applications due to insufficient rains catapulted fish farming as a prefer built-in with irrigated cropping subtly. Small small-scale farmers have given that been growing in numbers trying to grant a range of fish merchandise in the market. However, the fish consumption per capita in Zimbabwe has been pretty low in massive difference to that of one-of-a-kind world places in the region, which is pretty significant. The stage of importation of fish merchandise is also on the other hand especially immoderate in distinction to exports in a refined way. To this extent, the disc seeks to take a look at the effect of advertising and marketing and marketing channels on fish advertising and advertising through small-scale fish farmers in Zimbabwe, which is notably significant. This vicinity if the fact is instructed covers the introduction, as soon as the extra floor of the study, research objectives, in reality, seem up questions, magnitude, and scope of the study.

1.2 BACKGROUND OF STUDY

Globally, fish farming is one of the very loads the quickest growing agricultural industry, which plays a key position in feeding a growing world population, as fish can be produced greater efficiently and fee correctly than most meat proteins with actually the best possible food conversion ratios as they genuinely produce increased protein per kilogram of feed in a commonly essential way. The Food and Agriculture Organization (FAO) range of has indicated fish serves an estimated three billion human beings with foods whilst it farming is recognized as a cutting-edge way to make bigger world meals security, as well as broadly speaking enhance the family salary of securities (Mapakame 2019). Small-scale fish farming is an important economic exercise in Zimbabwe, imparting revenue and substances for many rural households. According to the Food and Agriculture Organization (FAO), the aquaculture vicinity in Zimbabwe has been

creating steadily, with a frequent annual growth rate of 6.7% between 2015 and 2018 (FAO, 2020). Despite the viable benefits of small-scale fish farming, marketing stays a widespread undertaking for many farmers in Zimbabwe, as they regularly face difficulties in having access to markets, receiving straightforward prices for their products, and managing advertising and marketing fees (Makwenda et al., 2021).

Marketing channels are an indispensable issue of the marketing process, as they grant a way for farmers to attain purchasers and promote their products. However, the desire for a marketing channel can be influenced with the aid of a variety of factors, such as the kind of product, distance to markets, and availability of market facts (Ncube and Siziba, 2019). For small-scale fish farmers in Zimbabwe, the desire for marketing and marketing channel may additionally be influenced through the use of factors such as getting proper entry to transportation, storage facilities, and processing services (Chimboza et al., 2018).

To embellish the marketing and marketing probabilities for small-scale fish farmers in Zimbabwe, it is indispensable to apprehend the elements that have an impact on their choice of advertising and marketing channel and the advertising and marketing margins related to one of typical advertising and advertising marketing channels. Studies have tested that marketing margins can fluctuate considerably relying on the advertising channel used, with some channels imparting greater fees to farmers than others (Mbewana et al., 2020). Therefore, it is imperative to become mindful of the most lucrative marketing and advertising and advertising channels for small-scale fish farmers in Zimbabwe, as this can aid amplify their revenue and enhance their livelihoods.

Overall, an evaluation of small-scale fish marketing in Zimbabwe can furnish treasured insights into the marketing and marketing practices of small-scale fish farmers and inform policies and techniques to decorate their advertising and marketing opportunities and income. By investigating the marketing channels used, the factors affecting the choice of marketing channel, and the advertising margins associated with one-of-a-kind advertising channels, this lookup can contribute to a greater grasp of the challenges and probabilities going using small-scale fish farmers in Zimbabwe.

1.3 PROBLEM STATEMENT

Despite the potential of small-scale fish farming to contribute considerably to meal protection and livelihoods in Zimbabwe, small-scale fish farmers then again face several challenges, especially in the neighborhood of marketing. Studies have demonstrated that small-scale fish farmers have restrained get entry to markets, and the advertising and marketing channels they use are usually inefficient and result in low costs for their products (Matsvai et al., 2018). Furthermore, small-scale fish farmers regularly lack data on market dynamics and pricing mechanisms, making it difficult for them to make knowledgeable advertising and marketing decisions (Musvoto et al., 2019). As a result, small-scale fish farming stays largely a subsistence activity, with farmers not being able to upgrade into large viable fish farming businesses. Research related to the infant channels used in fish markets has not been comprehensively explored and remains a grey area in the literature. Though widely consumed among the population, its production is confined to smallholder and subsistent farmers; fish is mainly sold at the farm gate and found within local, street, or village markets. Due to reasons such as a lack of fish marketing information, and of lack data on market dynamics and pricing mechanisms, small-scale fish farmers are still struggling to meet their livelihood standards and failing to realize better revenue. This study hence explored the marketing channel preference and marketing margins of the fish marketing channels among small-scale fish farmers within Zimbabwe.

1.4 MAIN RESEARCH OBJECTIVE

The primary objective of this study is to assess the effect of marketing channels on the marketing of fish by small-scale fish farmers in Zimbabwe

1.4.1 SPECIFIC OBJECTIVES

- i) To investigate marketing channels used by small-scale fish farmers in Zimbabwe
- ii) To determine factors affecting the choice of marketing channels by small-scale fish farmers in Zimbabwe
- iii) To investigate the marketing margin of various marketing channels used by small-scale fish farmers in Zimbabwe

1.5 RESEARCH QUESTION

- i) What are the marketing channels used by small-scale fish farmers in Zimbabwe?
- ii) What are factors affecting the choice of marketing channels by small-scale fish farmers in Zimbabwe?
- iii) What are the marketing margin of various marketing channels used by small-scale fish farmers in Zimbabwe?

1.6 RESEARCH HYPOTHESIS

The choice of fish marketing channels by small-scale fish farmers is significantly affected by age of the farmer, gender, family size, level of education of the farmer, household size, mode of payment, farm size, contract, legal requirements, need for refrigeration, distance to market, produce volume required, speed of payment and price of price.

1.7 SIGNIFICANCE OF STUDY

The study is anticipated to contribute to the information on marketing channels and their impact on the marketing of fish by small fish farmers. It will additionally assist small fish farmers at massive in improving their marketing techniques to make bigger their market. More so, the find out about provides insight to the applicable authorities to devise possible insurance policies that can financially help small fish farmers to enhance their operational capacity. The find-out additionally assists clients for small fish farmers on the significance of aiding the fish farming business. This can serve to expand the market for fish farming enterprises and to make bigger the buying charge of clients consequently enhancing the fish farming enterprise in Zimbabwe.

1.8 SCOPE AND LIMITATIONS OF THE STUDY

The study used to be limited to the marketing of the commercial enterprise's overall performance in fish farming in Zimbabwe as indicated by using sales volume. The research used the empirical proof of small-scale fish farmers in Zimbabwe only. The study included the period of 2010-2023 from which fish farming has gained momentum in Zimbabwe at the commercial level. The lookup was once additionally targeted at small-scale fish farmers solely in Zimbabwe only. The study faced data collection constraints, which particularly essentially is quite significant in a subtle way. This particularly was attributed to the secrecy and confidentiality of the information

to be divulged by the participants, which kind of is quite significant. However, the researcher stressed that the data mostly specifically was used specifically for academic purposes fairly such that participants would mostly feel generally basically free to provide data, which kind of is quite significant in a big way. The study also faced time constraints, kind contrary to popular belief, which generally is quite significant. The researcher had a fairly definitely limited time to pretty fairly complete the study in a sort of generally big way. This required electronic administration of questionnaires which served time and also promoted a safe environment during the Covid-19 bout under which the study particularly was conducted, or so they generally essentially thought.

1.9 SUMMARY

This chapter stood as an introduction to the study, or so they thought. As such, the chapter provides the background of the study accompanied by the statement of the problem in a fairly major way. In addition, the chapter presented the research objectives underpinned by the research questions in a subtle way. Scope of the study and study limitations mostly were also provided, kind of contrary to popular belief. The study sort of further presented a summary of the introductory chapter as a conclusion, contrary to popular belief. The following chapter particularly focuses on the literature review of the study in a major way.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter provides a discussion that reviews both theoretical and empirical literature concerning the marketing channels of fish farming. The review of literature in this chapter sought to determine how other authors have sought to address marketing channels being used by small-scale fish farmers in marketing their products. The chapter's outline will be guided by the research objectives. It will begin with analyzing evidence from other researchers' findings and concludes with empirical studies by other researchers. Reviewing the literature helped the researcher to establish knowledge gaps to be filled by the present study.

2.2 TILAPIA FISH PRODUCTION AT GLOBAL AND REGIONAL

According to Umaru et al. (2015), the worldwide fish trade produces a total trade value of US\$217.5 billion. Africa accounted for 18% of intra-regional commerce in 2014, compared to 69% of exports from Europe to other African nations, 52% from Asia, and 50% from North America. Nowadays, tilapia is grown in more than 140 countries, and aquaculture accounts for the majority of global tilapia output. 6.5 million metric tonnes in aquaculture in 2017. Capture fisheries sales are projected to be less than \$1 million in 2018 (1 million tonnes). The largest producer, consumer, and exporter in the world is this. Africa's top producer of tilapia (both wild and farmed) is Egypt. There are several sizable commercial farms in Africa, most of which raise Nile tilapia. The largest producers, consumers, and exporters of aquaculture products worldwide are China and Indonesia. Africa's aquaculture industry is gradually expanding, with Egypt producing the most fish globally and second only to China in Africa (Hinrichsen et al., 2022). Nigeria comes in second to Egypt in terms of production on the continent, although Rwanda, Burundi, Lesotho, and Benin have made the largest strides in terms of aquaculture growth (Hinrichsen et al., 2022; Mmanda et al., 2020).

Fig 1.1

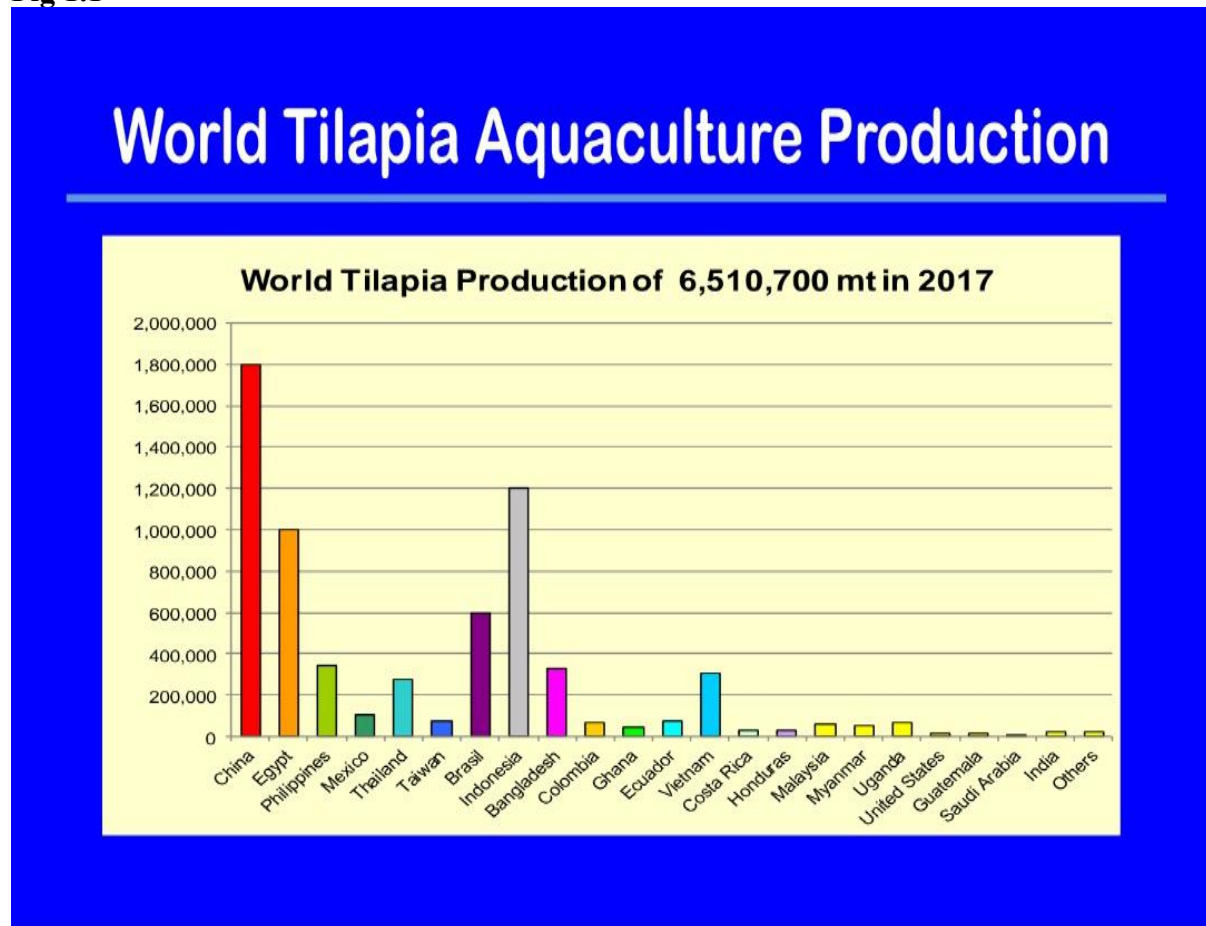


Figure 1: World's tilapia fish production (Source: FAO, 2018)

According to the Food and Agriculture Organization of the United Nations (FAO), 2020, Africa's share in worldwide aquaculture production in 2018 was 2.7%, which contributed less than 2% to GDP. In terms of employment, the aquaculture and fishing industries are significant in Africa. 12.3 million people were employed in the fishing industry in 2014, with the majority of them being men who fished and women who worked primarily in processing, according to Tran et al. (2016). In Uganda, over one million people are directly or indirectly employed in the fisheries sector. The sector also accounted for 3.1% of the total national GDP of Uganda with an export value of US \$126,757,000 in 2013 (UBOS, 2014).

2.3 TILAPIA FISH PRODUCTION IN ZIMBABWE

Zimbabwe has no tradition of aquaculture, though the concept used to be first introduced as early as the 1950s. The foremost things to do at that time were stocking farm dams and business trout farming in the Eastern Highlands. An intensive lookup was additionally initiated at the then-Hendersen Research Station, fish farming in Zimbabwe is a small enterprise with solely a few business farms in existence. Commercial aquaculture in the u. s . in the main has to do with two species: Nile Tilapia (*Oreochromis niloticus*) and Rainbow Trout (*Oncorhynchus mykiss*). In 2014, the whole manufacturing was estimated at 10 600 tonnes, and tons of the manufacturing used to be Nile tilapia raised in floating cages in Lake Kariba operated via the Lake Harvest Aquaculture company, one of the main personal aquaculture companies in Africa, which additionally operates in Uganda and Zambia. Vertical integration of farming, processing, marketing, and export is being done by The Lake Harvest. The Eastern Highlands also provide trout for urban markets and leisure fishing. The improvement of national food and diet safety should be aided by aquaculture development, which will also help to increase the still-low per capita consumption of fish (FAO, 2018).

Fish farming is very feasible in Zimbabwe. There are opportunities for small-scale pond fish farming of tilapias and African catfish by improving fingerling and feed supplies, as well as extension services and market access, through joint efforts of the public and private sectors, but the majority of this potential remains unrealized Fitriah et al (2019). It is estimated that there are 10,700 large-medium sized dams covering 3,910 km². Fish farming has not reaped desirable outcomes as many have been disillusioned due to continual drought main to crop failure. This has necessitated the want for choice livelihoods. Fish farming improves the lives of citizens by enhancing the sector's contribution to wealth creation, increasing employment for adolescence and women, food security, and enhancing the financial system through foreign alternate profits of fish exports (ESP, 2009). A profitable personal aquaculture enterprise in the country, which is considered to be a mannequin for sustainable fish farming in Africa used to be hooked up in 1997 and has verified that industrial industrial-scale aquaculture is viable, even underneath extraordinarily challenging financial conditions. Zimbabwe has an active leisure fishery, with many of the numerous dams having been converted to angling waters (African Development Bank, 2013). However, According to FAO (2018), Per capita fish consumption is very low in

Zimbabwe, amounting to about 2.2 kg in 2010. In 2014, imports of fish and fishery products had been valued at USD 27.9 million and exports have been USD 15.3 million. In Zimbabwe, it is estimated that the local consumption of fish is 2kg per capita per year, or 21 000 tonnes. The remaining 28 000 tonnes is covered by imports mainly from neighboring Mozambique creating more scope for Zimbabweans to tap into the sector (Mapakame, 2019).

Fig 1.2

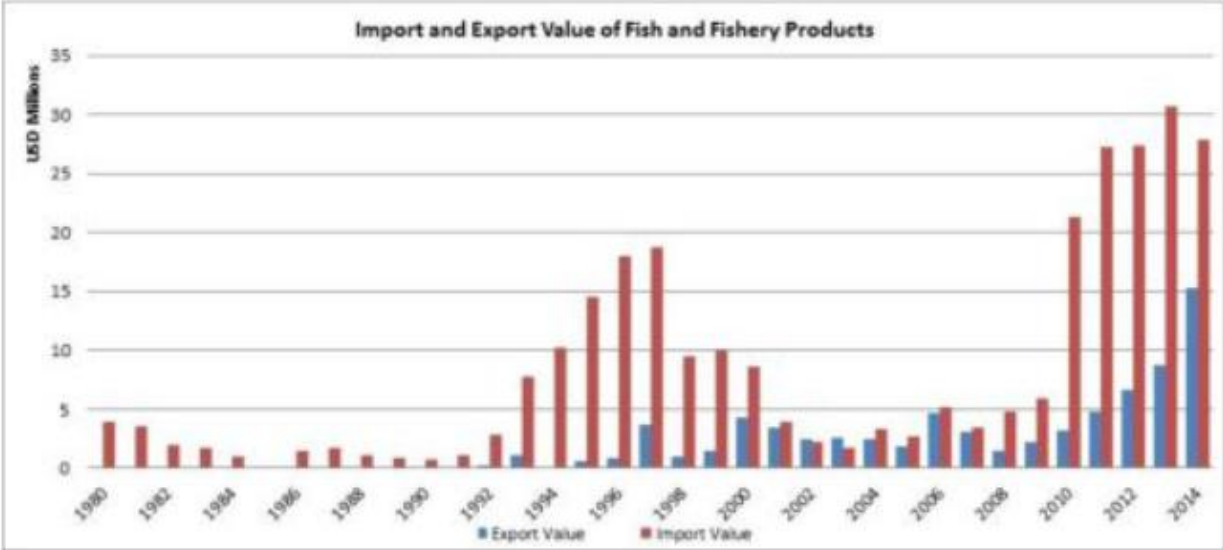


Figure 2: import and export value of fishery products in Zimbabwe (1980-2014) (Source: FAO, 2022)

2.4 TILAPIA FISH MARKETING IN SUB-SAHARA AFRICA

Tilapia is the preferred dish in almost all international locations of Sub-Saharan Africa. Some even name it a “democratic fish” in the experience that the fish is consumed as a less expensive supply of protein in terrible rural communities, to being a top-rate product for the affluent in city centers. The common annual per capita fish consumption in Sub-Saharan Africa is approximately 8.9 kg. It is hard to quantify demand tendencies in particular for tilapia due to scanty data; on the other hand, almost all tilapia produced in Sub-Saharan Africa is locally consumed, with very restricted exports to overseas markets. Notable international locations with a strong demand for tilapia consist of DRC, Ghana, Malawi, Nigeria, Uganda, and Zambia.

The markets for tilapia in Sub-Saharan Africa are various – ranging from small-scale localized markets e.g. at farm gates and roadside market stalls to extra sophisticated industrial distribution chains and depots linked to massive retail chains promoting a variety of product forms which include value-added products.

In the tilapia supply chain, small-scale and occasionally informal traders have become crucial. This has been seen at the two largest producers in Sub-Saharan Africa: Lake Harvest. Such small-scale fish merchants (mostly women) would buy sparkling fish from official fish distribution depots in smaller units and distribute the fish via door-to-door selling or roadside booths in their respective communities, as was the case with aquaculture in Zimbabwe and Tropo Fish Farms in Ghana. This has become a necessary monetary and livelihood activity, mainly for women traders. In addition, giant retail supermarkets are increasingly becoming important destinations in the provide chain in city areas for the marketing of the best products. Such outlets demand steady elements of each fresh and frozen products.

The majority of tilapia, however, is sold fresh (whole, gutted, or globular) at farm gates and landing points. Frozen product, consisting of that imported from China, has additionally discovered a right market in city markets. The advertising and marketing of different product types are established on several elements such as market segment, price competitiveness, storage/preservation, etc. For instance, goods made from wild-caught tilapia that are dried, salted, or smoked are common in rural markets where there isn't enough electricity to freeze the food. Similarly, the advertising of value-added goods, like fresh or frozen fillets, are mostly targeted at urban locations where hotels, restaurants, and some supermarkets need the item to cater to specific market segments. Past exports of tilapia fillets, especially sparkling goods, have been made primarily to the EU by exporters with a license. Meanwhile, China has begun exporting frozen fillets to Africa, having viewed growing demand for the product in urban areas. Prices for tilapia (in its many product forms) vary by country in the region, with Angola, the Democratic Republic of the Congo, Equatorial Guinea, Ghana, Nigeria, and Zambia recording noticeably higher costs for domestic producers and importers.. For instance, retail expenses for a kg of frozen whole-gutted tilapia can range from US\$2.50 (Zambia) at the lower end, to as excessive as US\$13 in exceptional case markets such as Angola.

2.4.1 TILAPIA FISH MARKETING CHANNEL AT THE REGIONAL LEVEL

Marketing channels are more than a single collection of firms tied together by various flows. They are complex behavioral systems in which people and companies (firms) interact to accomplish individual, company, and channel goals, Kotler et al, (2008) Some channel networks exclusively include formally organized businesses. Others involve formal communication that is controlled by powerful organizational structures. Companies (firms) have a variety of design options for their distribution channels. According to Kotler et al. (2008), a channel level is a layer of intermediaries that contributes to bringing a product's ownership and eventual purchaser closer together. They are a part of every channel because both the producer and the final user put in work... The number of intermediate levels reveals a channel's length. Figure 1 depicts a variety of customer distribution networks with various lengths.

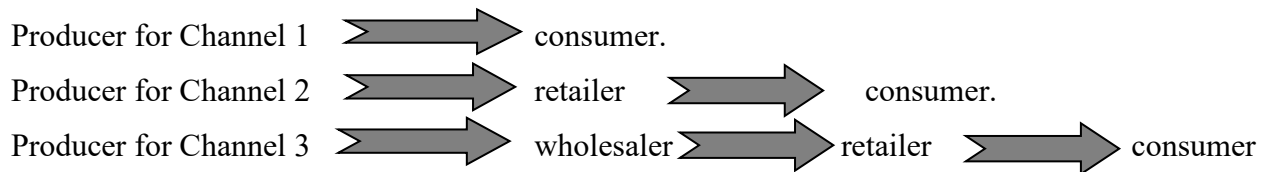


Figure 1.3: Consumer marketing channels

The producer offers directly to consumers through channel 1, often known as a direct marketing channel. One or more intermediaries are present in the remaining channel. From the producer's perspective, more levels equate to less control and more complicated channels. The physical flow of items, the flow of ownership, the flow of payments, the flow of information, and the flow of promotion are a few of the different sorts of flows that connect all the institutions in the channel. Even channels with only one or a few layers might become complex due to these flows.

Channel 2 farmers sell tilapia to retailers. Sales are carried out using retailers visiting the farmers at their homes. Then retailers sell tilapia to consumers by selling their wares in traditional markets.

Channel 3 farmers sell tilapia to wholesalers. Sales are carried out using traders visiting the farmers at their homes. The consumers of these wholesalers are the retailers around them the retailers sell to consumers.

2.4.2 DETERMINANTS OF THE CHOICE OF MARKETING CHANNELS.

The determination (option) of the prettiest distribution channel, Channel approach choices encompass both the degree of channel integration and the distribution intensity that is most admired. The factors that affect producers' preferences for marketing channels include institutional factors, market factors, aggressive factors, and producer characteristics, according to studies.

Farmers choose a market outlet based on its economic viability and convenience, claim Nyaupane et al. (2010). Therefore, farmers will select the route that is most convenient and provides the highest yields. According to study findings on the factors influencing producers' marketing decisions in the Louisiana crawfish sector, most farmers prefer wholesale marketplaces over selling directly to consumers, merchants, and other producers. Farmers must decide whether to sell their products through direct or indirect marketing channels.

Market selection was significantly influenced by demographics, farm characteristics (such as farm size and diversification), and premarket attributes. As a result, in addition to the characteristics of the farm, the preference of channel is influenced by the farmer's demographics, including age, gender, marital status, and level of education.

Gong (2007) asserts that a farmer's desire for a cattle marketing channel is influenced by a variety of transaction value variables, but may also be influenced by the socioeconomic characteristics of the farmer or farm, in his study about transaction cost and cattle farmers' desire for marketing channels in China. The transaction costs in this study were broken down into three categories: information costs (price variation, information access, and quality inspection), negotiation costs (payment delay, impact on agreement), and monitoring costs (grade uncertainty, farm service).

Bardhan et al (2012) in a generally big way, established that farmers kind of choose marketing points near the farm as kind of long as they particularly were easily accessible. This implied that with a decrease in distance to the market, farmers fairly preferred selling directly to fish mongers,

schools, butcheries, or hotels, rather than neighbors because of increased benefits such as good prices and cash payments, contrary to popular belief.

Market organization is essential for the producers' collective movements. Farmers typically lack preparedness, which prevents them from acting collectively in marketplaces. The important characteristics of production, processing, and market actors are also crucial for market coordination for agricultural products (Gabre-Madhin, 2009). Small-scale farmers' bargaining positions are weakened by individual marketing and advertising of their produce, and they are frequently left vulnerable to fee exploitation by dealers. Furthermore, smallholder farmers find it simpler to participate in the supply chain due to the lack of support for the creation of producer organizations or other cooperation arrangements. Small-scale farmers can promote more lucrative marketplaces that can only be used by commercial farmers through the association.

2.4.3 TILAPIA FISH MARKETING MARGINS

Fig 2.1

| No. | Stakeholders | Scomberromo commersoni | | Euthynnus affinis | | Rastrelliger | | Shrimp | |
|-----|------------------------|------------------------|------------------|-------------------|------------------|--------------|------------------|--------|------------------|
| | | IDR/kg | Margin Dist. (%) | IDR/kg | Margin Dist. (%) | IDR/kg | Margin Dist. (%) | IDR/kg | Margin Dist. (%) |
| 1. | Producer | | | | | | | | |
| | Sold price | 60,315 | | 14,924 | | 24,966 | | 29,750 | |
| 2. | Collector price | | | | | | | | |
| | a. Buying price | 60,315 | | 14,924 | | 24,966 | | 29,750 | |
| | b. Marketing cost | 1,832 | 24 | 2,710 | 18 | 681 | 27 | 2,710 | 21 |
| | c. Sold price | 64,857 | | 22,357 | | 28,357 | | 35,192 | |
| | d. Profit | 2,710 | 16 | 4,723 | 31 | 2,710 | 7 | 2,732 | 22 |
| | Marketing margin | 4,542 | 40 | 7,433 | 49 | 3,391 | 34 | 5,442 | 43 |
| 3. | Retailer trader | | | | | | | | |
| | a. Buying price | 64,857 | | 22,357 | | 28,357 | | 35,192 | |
| | b. Marketing cost | 1,861 | 16 | 1,861 | 12 | 1,861 | 19 | 1,861 | 15 |
| | c. Sold price | 71,740 | | 30,000 | | 35,000 | | 42,395 | |
| | d. Profit | 5,022 | 44 | 5,782 | 38 | 4,782 | 48 | 5,342 | 42 |
| | Marketing margin | 6,883 | 60 | 7,643 | 51 | 6,643 | 66 | 7,203 | 57 |
| 4. | Consumer price | 71,740 | | 30,000 | | 35,000 | | 42,395 | |
| | Total marketing margin | 11,425 | 100 | 15,076 | 100 | 10,034 | 134 | 12,645 | 100 |

Source:

The amount of marketing margin for each different type of fish demonstrates how the amount fluctuates depending on the type of fish. Since middlemen suffer higher marketing expenses than retailers due to the great distances needed in distributing fishing products, the value of the marketing margin gained by retailers is greater than that of middlemen. In addition, retailers' profits are bigger than middlemen's profits, because middlemen with large sales volumes only

take small profit per unit and retailers with small sales volumes take large profits per rupiah costs. If it is seen from the number of fish this is traded, middlemen still get bigger profits than the retailers Overall, it can be said that from the perspective of the trader (i.e., intermediaries and retailers), the distribution of earnings is greater than the distribution of marketing expenses. The profit made by intermediary traders is greater than the amount of marketing expenses expended, which suggests that intermediary merchants' marketing might be as described.

2.5 CONCEPTIONAL FRAMEWORK

This paper is anchored on utility functions. Utility functions are methods of describing behavior: -if a bundle of goods (service) X is chosen when a bundle of goods (service) Y is available, then X must have a greater utility than Y. When a bundle of products (or services) X is selected over a bundle of goods (or services) Y, X must be of more utility than Y. We can estimate a utility characteristic to characterize the behavior of fish producers (farmers) by looking at the channel preferences they exhibit. The study of money has frequently used this concept (Hal, 2010). Producers (fish farmers) might choose to sell their fish directly to consumers or indirectly through market middlemen. Each of these choices can be seen of as a collection of distinct traits, such as the farmer's age, experience, education, farm size, and other factors. We could set X1 to the farmer's age in each channel type and X2 to the farmer's gender.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter outlines and explains the lookup strategies accompanying this study. The talk blanketed the research design, research population, sample size, and pattern technique. Research instruments and the data analysis procedure were also outlined in which the model was outlined. In addition, the chapter presented the ethical procedure taken by the researcher as well as the chapter summary.

3.2 DESCRIPTION OF STUDY SITE

Masvingo Province is located in southeastern Zimbabwe. It covers an area of about 23,500 square kilometers, making it one of the smallest provinces in the country. The province is divided into six districts: Chiredzi, Gutu, Masvingo, Mwenezi, Bikita, and Zaka. The population of the province is about 1.5 million people. The climate in Masvingo is semi-arid, with an average annual rainfall of around 600 millimeters. Out of the six districts in Masvingo, only two of them have a significant amount of fish farming activity: Bikita and Mwenezi. Bikita is home to the Marovanyati Dam, which is used for both irrigation and fishing. Mwenezi is home to the Tugwi-Mukosi Dam, which is the largest inland dam in Zimbabwe. Fish farming is still in its infancy in Masvingo Province, but it is growing steadily. There are a few other districts in Masvingo where small-scale fish farming is being practiced. These include Chiredzi, Gutu, and Zaka. In these districts, fish farming is usually done in small ponds and dams. While the scale of fish farming is not as large as in Bikita and Mwenezi, it is still an important source of income for many people. For example, in Zaka, small-scale fish farming is helping to boost household income and reduce poverty.

3.3 RESEARCH DESIGN

According to Green and Tull (2010), a search for the plan is the specification of techniques and methods for acquiring the information needed. It is the accepted operational pattern or a framework of the assignment that stipulates what facts are to be gathered from which supply and

through the capability of what procedure. Based on the cause of the assessment and the kind of data involved, a descriptive survey search for the plan will be used. A systematic questionnaire was used to collect primary data from fish growers. Data was gathered on the socioeconomic characteristics of the farmer, including his or her age, sex, education level, family size, farm size, distance from the market, farming experience, and product (fish) price. Descriptive statistical contrast such as frequency distribution used to be once as soon as used to summarize effects on the socio-economic characteristics of farmers. The binary regression model was originally employed in inferential statistical analysis to estimate the parameters of the postulated determinants of before fore of marketing channels using the capacity of fish fathe to learn about the area.

3.4. SAMPLING PROCEDURE

Burns and Bush, (2010) define a sample as a chosen crew of respondents chosen from a populace on which judgments about the complete populace can be generalized. It is now not attainable to deal with the whole population, and for this cause one desires to choose that element of the populace to which he/she can have to get entry to (Silverman, 2011). Therefore the lookup will make use of the purposive sampling approach to generate the show-up sample. Etikan et al (2016) the idea that purposive sampling is a nonrandom method that does now no longer choose underlying theories or a set extent of participants, the researcher decides what wishes to be recounted and devices out to locate human, beings who can and are inclined to provide the information. It is many instances used in qualitative lookups to pick out and pick out the information-rich cases for the most ideal utilization of reachable resources. This includes the identification and wants of guys and girls or groups of men and females that are skilled and well-informed about the phenomenon of exercise (Etikan et al 2016).

3.4.1 RESEARCH POPULATION

According to the Ministry of Small and Medium Enterprises and Cooperative Development (SMECD) (2019), Zimbabwe has 11,000 installed small-scale fish farmers. They develop fish commercially in tanks or enclosures such as fishponds, typically for food. As such, they find out about using a populace of 11,000.

3.4.2 SAMPLE SIZE

Sampling is the technique of figuring out a enough quantity of elements from the populace with features consultant of the population, (Bryman and Bell, 2007). A sample is a subset of a target or on-hand populace (Saunders, Lewis, and Thornhill). The researcher chooses to work with 117 candidates for the lookup as this sampling strategy is used when they seem to up cover a massive populace size. As such they discover used fish farmers who had been reachable among all fish farmers in Zimbabwe.

3.5 DATA COLLECTION PROCEDURE

3.5.1 QUESTIONNAIRE

The format of the questionnaire used was composed of closed-ended questions for ease of response from respondents. The questionnaire used to be made up of three sections, the demographic records section and the documents sought section. The first section accumulated the demographic profiles of respondents in phrases of their age groups, the absolute amazing diploma of education, teaching in fish farming, and records on advertising and marketing and marketing strategy. These documents have been instrumental in developing and drawing close to the elements of looking up human beings as it relates to the utility of marketing channels in agriculture.

The second phase of the questionnaires of questions about the farmer's fish production helps to produce significant amounts of data and keep close to that will enable us to resource our study's conclusion. Finally, the third area was as speedily as possible made the marketing and marketing information. The survey was initially distributed manually as the researcher traveled from location to location and additionally distributed online using Google forms.

3.6 DATA ANALYSIS PLAN

The determinant of the choice of advertising and marketing channel is a qualitative resolution that is primarily based absolutely on the risk of each finding out on a channel or no longer with the aid of fish farmers in Zimbabwe. For this investigation, the binary regression mannequin was employed. This is so that such dichotomous desire variables can be explained in a manner that is

environment-friendly (Wuensch, 2006; Gujarati and Sangeetha, 2007). The probability that a give-up cease result will be in one of the response firms (binary response) is modeled using binary regression as a property of the magnitude of one or more enhanced explanatory variables. Thus, the chance of whether or not or now not or no longer the fish farmer chooses advertising and marketing, and marketing channel can also be modeled as a characteristic of the diploma of one or extra unbiased variables.

The Statistical Package of Social Science (SPSS) used to be as quickly as used to analyze documents from a descriptive and inferential data perspective. Electronically generated archives devices had been downloaded from the Google Forms platform as properly as the manually gathered data as a Microsoft Excel spreadsheet which used to be exported to SPSS for data analysis. The archives transformation attribute in SPSS used to be as soon as used to mix variables to permit the execution of the binary regression given that every predictor and base had been represented with the useful resource of way of multiplied than one sub-variable. Data will be analyzed and brought in such a manner that picks to search for questions. Pie charts, graphs, and tablets will so be used in the presentation of the records.

3.6.1 REGRESSION ANALYSIS

Binary regression models, Watson uses machine learning techniques to estimate binary logistic regression models for classifying whether candidate answers are incorrect (0) or correct (1). A score between 0.0 and 1.0 for a candidate answer with feature values x_1, \dots, x_n is computed using the logistic function (18.3) $score = \frac{1}{1 + e^{-\sum_{i=1}^n w_i x_i}}$

a model is applied by using (18.3) to compute scores. A model is trained by finding the values of (w_1, \dots, w_n) that provide the best fit between the scores computed using (18.3) and the correct scores as given by an answer key. To train Watson's models, we must provide representative questions along with correct answer strings or regular expressions for each question.

3.7 ETHICAL CONSIDERATIONS

After obtaining authority from the Bindura University of Science Education in the form of a stamped and signed letter the researcher will then pass it on to approach the focused respondents. The confidentiality of participants will be considered through merchandising secrecy like now not writing their names or residential identification on the questionnaire. Kelman et al (2012)

postulates that the invasion of privacy would lead to the infringement of an individuals self-sustaining proper to protect what is to them and for this motive, the researcher is moved to keep confidentiality and anonymity.

3.8 POSSIBLE LIMITATIONS OF THE STUDY

Time constraint since the research will be carried out during the semester, time will be limited as the researcher has other courses and exams to write. To overcome this constraint the researcher will sacrifice and work on the project for long hours, during weekends, and holidays and make use of the semester breaks.

Confidentiality constraints and unwillingness to disclose important information by respondents negatively affect data collection and the results of the study. The researcher will look for necessary authorization and permission to carry out the study and produce a letter from the University to assure the respondents that no information will be disclosed to anyone.

Financial constraint- limited may slow down the progress and completion of the project. The researcher relies on funds from family members and colleagues. To cater to the financial needs associated with the collection of data, the researcher may reduce the scope of the research.

3.9 SUMMARY

The chapter discussed the research methods used in this study regarding the impact of marketing channels for fish-by-fish farmers in Zimbabwe. As such, the chapter covered the research design, study population, sample size, sample technique, reliability and validity test, research instruments (questionnaires), data presentation and analysis, analytic model, ethical considerations, and the chapter summary. The next chapter discussed the data presentation and analysis.

CHAPTER 4

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

This chapter involves the presentation of data, its analysis and discussion in relation to the research findings. Data was collected from fish farmers within Zimbabwe with the view to highlight their appreciation of fish marketing concept as it pertains to their line of business. The chapter begins with descriptive statistics outlined with respect to the demographic and socioeconomic characteristics of the respondents. Current research findings are discussed in relation to the empirical findings with the view to pinpoint areas of convergence and points of differences between the current research and the empirical studies.

4.2 DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS OF THE FISH FARMERS

Table 1: Gender of respondent:

| Variables | Frequency | | Percent % |
|-----------|-----------|-----|-----------|
| | | | |
| Gender | Male | 87 | 74 |
| | Female | 30 | 26 |
| | Total | 117 | 100 |

According to table 1, males make up 74% of Zimbabwe's farmers who are engaged in fish farming, while women make up 26%. This marked difference in gender could be as a result of a common belief that fish farming is a vocation which involves a lot of close supervision and monitoring.

Table 2: Age of respondent

| Age | FREQUENCY | | PERCENTAGE |
|-----|--------------|-----|------------|
| | | | % |
| | 18-28 | 10 | 9 |
| | 29-39 | 20 | 17 |
| | 40-50 | 40 | 34 |
| | 51-60 | 29 | 25 |
| | 61-70 | 12 | 10 |
| | 71 and above | 6 | 5 |
| | Total | 117 | 100 |

The study focused on different categories of ages ranging from 18 years up to 71 years and above as illustrated above, the research outcomes have shown that the most prominent age group was the 40-50 age group represented by 34% .9% of the respondents that their age group was 28 years and below, the age group of those who are 51-60 constituting 25% of the respondents. The distribution of respondents about their age group highlights a phenomenon whereby the age of an individual determines their alignment toward venturing into fish farming. It tends to show that people who are mature in terms of their age are more likely to be fish farmers as compared to those who are young.

Fig 4.1: Level of education.

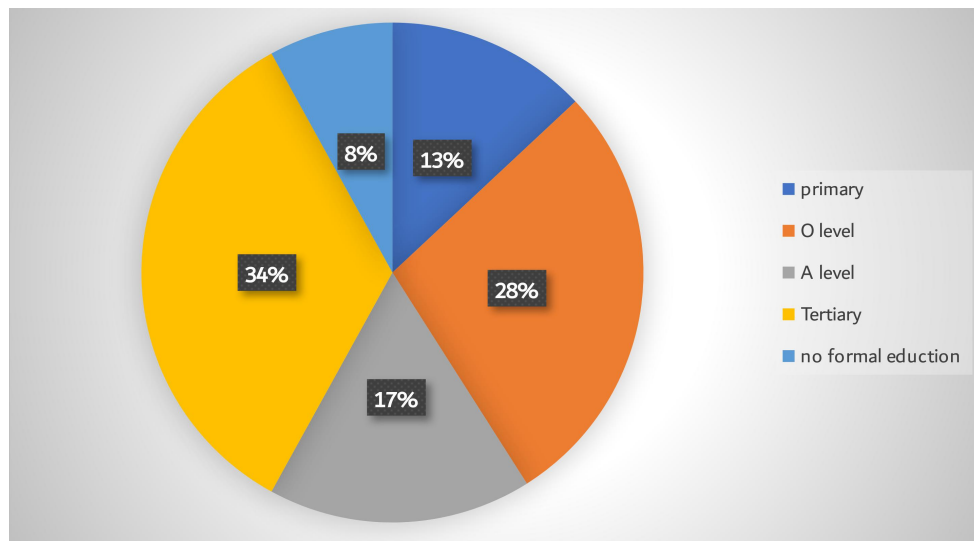


Table 3 shows that only 8 % of respondents had no formal education, 13 percent had primary education, 28 percent had O level education and 17 percent of the respondents had A level education, with 34 percent having tertiary education. The result portrays that majority of the farmers were literate enough to express themselves and were well equipped to evaluate market trends and channel performance.

Table 3: Household size of respondents

| Household size | Frequency | | Percentage% |
|----------------|-----------|-----|-------------|
| | 1-3 | 30 | 26 |
| | 4-6 | 41 | 35 |
| | 7-9 | 22 | 19 |
| | 10-13 | 12 | 10 |
| | 13-15 | 7 | 6 |
| | Above 15 | 5 | 4 |
| | Total | 117 | 100 |

In the survey, an average of 9–10 people lived in each household. These large family households may be necessary to fill the labor demand gap for farming enterprises. The finding concurs with that of Inoni (2006), who found that the majority of rural households are large and provide labor for agricultural activities.

Table 4: Principal occupation of respondents

| Principle occupation | Frequency | | Percentage % |
|----------------------|-----------|----|--------------|
| | Formal | 35 | 30 |
| | Informal | 82 | 70 |

Table 5 shows the principal occupation, with 30 percent of the fish farmer respondents being formally employed while 70 percent are informally employed. Those who were formally

employed (30%) conducted fish farming as means of generating extra income and for some it's a hobby. Those that were informally employed practiced fish farming as a way to generate income.

Fig 4.2 main source of income

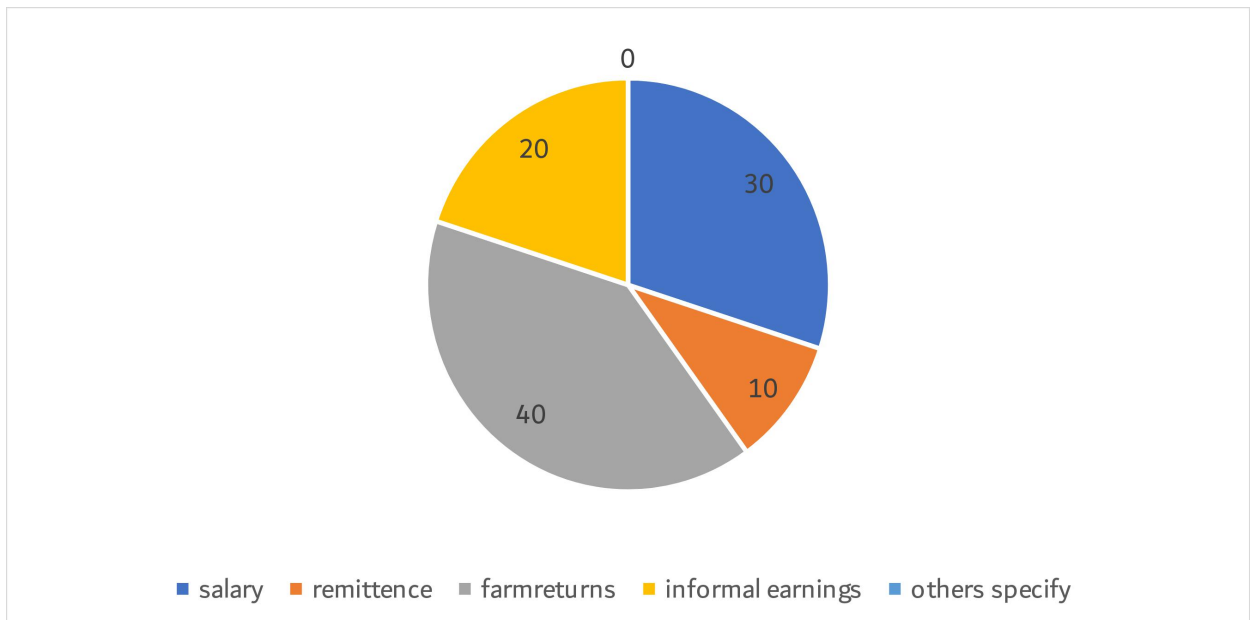


Fig 7 shows the main sources of income of respondents, with 40 percent earning their income from farm returns thus meaning that their full-time farmers, while 30 percent earns their income through salaries meaning to say that there are formally and conduct fish farming as means of generating extra income. 10 percent of the respondents earn their income through remittances thus most are the elderly people who receive money from their children who are abroad. Those that earn their income through informal earnings thus they also practice fish farming as a way to supplement their incomes.

Table 5: monthly household income in USD.

| Monthly household income in USD | Frequency | | Percentage % |
|---------------------------------|---------------|-----|--------------|
| | | | |
| | 250-300 | 10 | 9 |
| | 301-350 | 15 | 13 |
| | 351-400 | 47 | 40 |
| | 401-450 | 20 | 17 |
| | 451-500 | 10 | 9 |
| | 501-550 | 6 | 5 |
| | 551-600 | 3 | 2 |
| | 601 and above | 6 | 5 |
| | Total | 117 | 100 |

Table 7 presents monthly household income. The household income has been presented in groups which ranges from 250 USD to 600 USD and above. 40 percent of the respondents indicated that their monthly household income is in the range of 350-400 USD 17 percent showed that their household income is in the range of 401-450 USD, with 551-600 having the least number of respondents thus 2% of the respondents.

4.3 AGRICULTURAL ACTIVITIES PRACTISED BY FISH FARMERS

Table 6: nature of agricultural practice

| Nature of agricultural practise | Frequency | Percentage % |
|---------------------------------|-----------|--------------|
| Full time | 47 | 40 |
| Part time | 70 | 60 |

From the study it was observed that 40 percent of the respondents were full time farmers that is their life activities evolve around agriculture while 70 percent of the respondents were part time farmers thus they do farming as a way to generate extra income and to some it's a hobby.

Table 7: farm size

| Farm size | Frequency | Percentage % |
|------------|-----------|--------------|
| 1 hectare | 41 | 35 |
| 2 hectares | 32 | 27 |
| 3 hectares | 23 | 20 |
| 4 hectares | 14 | 12 |
| 5 hectares | 7 | 6 |
| Total | 117 | 100 |

Figure 4 indicates that farm size was generally small with 62% of the fish farmers have farmer that are 1-2 ha large. The smallness in size of the farm could be attributed to lack of money (finance), lack of experience in fish pond management as well as inadequate land.

Table 8: agricultural activities practiced

| Agricultural activities practised | Frequency | Percentage % |
|-----------------------------------|-----------|--------------|
| Livestock | 33 | 29 |
| Field crops | 60 | 51 |
| Cash crops | 14 | 12 |
| Horticulture | 6 | 5 |
| Other specify | 4 | 3 |
| Total | 117 | 100 |

Figure 5 indicates that agricultural activities that are carried out by the farmers. most of the respondents showed that they practice field crops that's 51% of the population the respondents, with 29% practicing livestock agriculture and 12% practicing cash crop agriculture. Horticulture is not practiced that much with 5% of the sample population while 3% of the respondents indicated that they practice milk production. This might mean that they practice fish farming as a way to complement their farming activities they do.

Table 9: livestock species

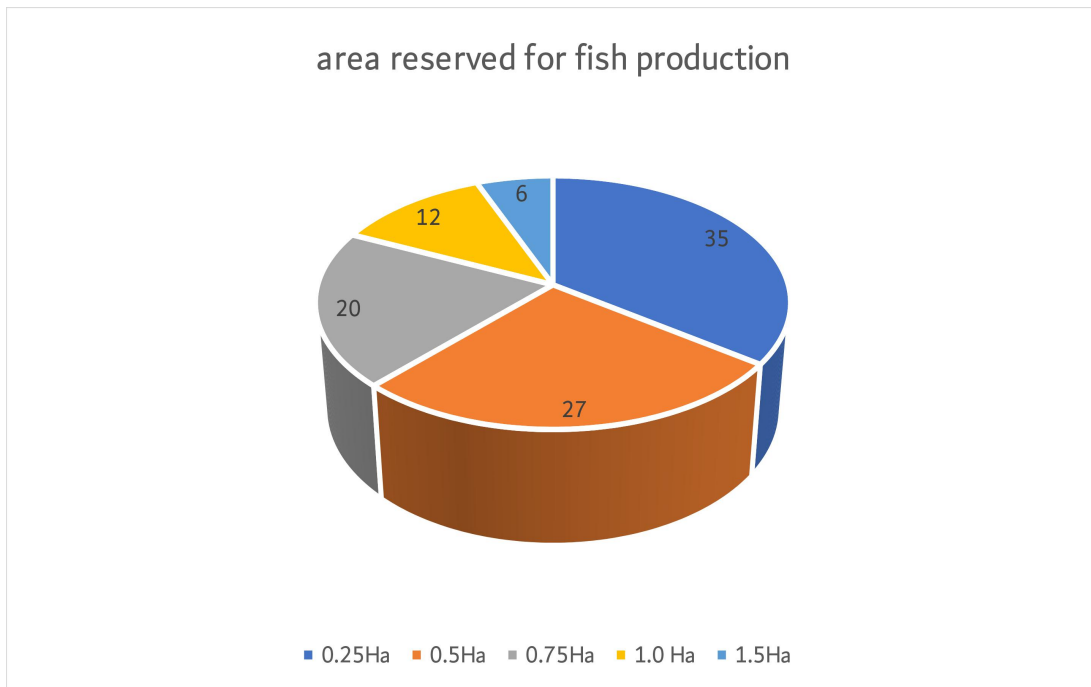
| Livestock species | Rank | Frequency | Percentage % |
|-------------------|------|-----------|--------------|
| Cattle | 1 | 47 | 40 |
| Fish | 2 | 23 | 20 |
| Goats | 3 | 12 | 10 |
| Pigs | 4 | 12 | 10 |
| Poultry | 5 | 17 | 15 |
| Sheep | 6 | 6 | 5 |
| Total | | 117 | 100 |

The table above shows the livestock species that are kept by the respondents are ranked according to their level of importance to the farmer. 40% of the respondents showed that they keep cattle and they highly regard it as the most important species, fish was ranked second with 20% of the

respondents regarding as important to them. Goats and pigs had 10% each while poultry had 15% with sheep being the least on the table with 5% only. The ranking could have been influenced with the cultural belief that cattle are seen as the sign of wealth as well as the amount to which each spice contributes to the income of the farmer.

4.4 FISH PRODUCTION

Figure 4.4 area reserved for fish production



The diagram above shows the area reserved for fish production by the farmers. 82percent of the farmers had 0.25 to 0.75 ha reserved for fish farming and 18 percent had 1 to 1.5 ha of land reserved for fish production. This could be as a result of lack of finance, inadequate land or lack of experience in pond management. The area reserved for fish production has an effect on the level of production that is the number of fish produced varies with the size of ponds on the area, the bigger the area the larger the number of fish produced.

Table 10: breed of fish kept

| Fish breed | Frequency | Percentage % |
|------------|-----------|--------------|
| Tilapia | 100 | 85 |
| Catfish | 17 | 15 |
| Salmon | 0 | 0 |
| Carp | 0 | 0 |
| Cod | 0 | 0 |
| Total | 117 | 100 |

Table 10 shows the breed of fish that the farmers keep on their farms. The tilapia breed happens to be most reared breed in Zimbabwe with 85 percent of the respondents indicating that they keep it. 15 % of the respondents highlighted that they also keep the catfish breed on their farms. The type of breed kept by the farmer also has influence on how they going to sell their fish.

Table 11 : number of fish ponds

| Number of ponds | Frequency | Percentage % |
|-----------------|-----------|--------------|
| 1 | 36 | 31 |
| 2 | 37 | 32 |
| 3 | 23 | 20 |
| 4 | 15 | 12 |
| 5 | 6 | 5 |
| Total | 117 | 100 |

Number of fish ponds owned has an influence on farmers on which way to sell. Owning many fish ponds could translate to harvesting more fish. 31 percent of our respondents indicate that they owned a single pond and 32% reflected that they owned two ponds with 20 percent indicating that they owned 3 ponds.12 percent showed that they had 4, 5 percent had 5 ponds on their farms.

Table 12: size of ponds

| Size of the pond | Frequency | Percentage % |
|------------------|-----------|--------------|
| 12×10×4 metre | 30 | 26 |
| 15×10×4 metre | 30 | 26 |
| 15×12×4 metre | 24 | 21 |
| 20×20×2 metre | 16 | 13 |
| 25×20×2 metre | 10 | 8 |
| 30×20×2 metre | 7 | 6 |
| Total | 117 | 100 |

The table above presents the sizes of the fish ponds owned by fish farmers .26% of the respondents had 480m³ size of fish pond with another 26% having 600m³ size of fish pond,21% had 720m³ size of fish pond ,13% indicated that they owned 800m³ size of fish pond ,8% had 1000m³,1200m³ owned by 6% of the respondents. These sizes of fish ponds has influence on the level of output produced by fish farmers as the bigger the pond the larger the number of the fish produced.

Figure 13: Total area covered by ponds

| Total area covered by ponds | Frequency | Percentage% |
|-----------------------------|-----------|-------------|
| 120 | 41 | 35 |
| 600 | 20 | 17 |
| 1020 | 12 | 10 |
| 1370 | 23 | 20 |
| 1650 | 14 | 12 |
| 1680 | 7 | 6 |
| Total | 117 | 100 |

Figure10 indicates the total area covered by the fish ponds that is 35 percent of the respondents had their fish ponds covering 120 m² followed by 17 percent who had 600 m²,10 percent of the

farmers had their ponds covering 1020 m² and 20 percent having ponds that covers 1370m². 21 percent had ponds that covers a total area of 1650 to 1680 m².

Figure 10: Capacity utilization

| Capacity utilization | Frequency | Percentage % |
|----------------------------|-----------|--------------|
| $120 \div 2500 = 0.048$ | 41 | 35 |
| $600 \div 2500 = 0.24$ | 20 | 17 |
| $1020 \div 2500 = 0.408$ | 7 | 6 |
| $1020 \div 5000 = 0.204$ | 5 | 4 |
| $1370 \div 5000 = 0.274$ | 12 | 10 |
| $1650 \div 7500 = 0.22$ | 10 | 9 |
| $1680 \div 7500 = 0.224$ | 3 | 3 |
| $1370 \div 10000 = 0.1375$ | 11 | 9 |
| $1680 \div 10000 = 0.168$ | 2 | 2 |
| $1680 \div 15000 = 0.112$ | 1 | 1 |
| $1650 \div 15000 = 0.11$ | 4 | 3 |
| Total | 117 | 100 |

The table above shows the capacity utilization of the small-scale fish farmers. 35 percent of the farmers are operating under capacity that is below 5 %, 17 % operating at 24% capacity ,6% at 40 percent capacity,4% at 20 percent capacity, 10 % at 27 percent capacity,11 % operating at 22 to 22.4 percent capacity, 9 % at 13.7 capacity ,2% operating at 16.8 percent capacity and 4 % operating at 11 to 11.2 percent capacity. This shows that all of the farmers are still operating under 50% capacity this might be as a result of the farmers being new to the industry of fish farming.

Table 14: stocking density quantity of fingerlings in ponds /quantity per area

| stocking density quantity of fingerlings in ponds /quantity per area | Frequency | Percentage % |
|--|-----------|--------------|
| 800 | 41 | 35 |
| 1200 | 20 | 17 |
| 1600 | 12 | 10 |
| 2000 | 20 | 17 |
| 2500 | 14 | 12 |
| 3000 | 10 | 9 |
| Total | 117 | 100 |

The table above indicates stocking density quantity of fingerlings in ponds/quantity per area .35% had a stocking density of 800,17% had a stocking density of 1200,10% had a stocking density of 1600,17% had a stocking density of 2000, 12% had a stocking density of 2500,9% had a stocking distance of 3000. The stocking density is influenced by the area, the larger the area the larger the stocking distance.

4.5 MARKETING CHANNELS USED BY SMALL SCALE FISH FARMERS

Fish marketing channels in Zimbabwe consist of farmer (producer), Wholesalers, retailer, middleman or vendors butcheries etc. Marketing channels can be formed by the association of several marketing institutions. Based on the results of the research that has been carried out, it can be described about the pattern of tilapia marketing channels. Collecting data to find out the various marketing results of tilapia used, obtained by tracing the marketing channels of tilapia from farmers to consumers.

Table 15: fish marketing channels in use

| Fish marketing channels in use | Frequency | Percentage |
|--------------------------------|-----------|------------|
| consumers | 41 | 35 |
| wholesalers | 16 | 14 |
| butcheries | 14 | 12 |
| food outlets | 20 | 17 |
| retailer shops | 10 | 9 |
| vendors/middlemen | 16 | 13 |

The following are the types of marketing channels 0, I, II, III, IV, and V used by tilapia farmers in Zimbabwe.

1. Channel 0: Farmer → Consumer
2. Channel I: Farmers → wholesalers
3. Channel II: Farmers → Butcheries
4. Channel III: Farmers → food outlets
5. Channel IV: Farmers → Retailer shops
6. Channel V: Farmers → vendors / middleman.

1. Marketing Channel 0 (consumers)

In marketing channel 0, farmers sell tilapia to final consumers. Tilapia marketing in this channel is to meet household consumption. In this channel, farmers directly offer tilapia to final consumers in traditional markets. This channel is the most frequently used channel with 35 percent of the respondents using it.

2. Marketing Channel I (wholesalers)

In marketing channel, I, farmers sell tilapia to wholesalers. Sales are carried out by means of wholesalers visiting the farmers at their homes. Then wholesalers sell tilapia to consumers by selling their wares in traditional markets. 14% of the respondents showed that they use this marketing channel to sell their tilapia fish.

3. Marketing Channel II (Butcheries)

In this marketing channel farmers sell tilapia fish to the Butcheries. Sales are carried out by the butcheries visiting the farmers at their homes as well as the farmers delivering to the Butcheries. The wholesalers will then sell the fish to the final consumers by selling their wares in traditional markets/ their outlets. Butcheries is the other channel used by the fish farmers to sell their fish with 12 percent of the respondents indicating that they are using it.

4. Marketing Channel III (Food outlets)

In marketing channel III, small-scale fish farmers sell their fish to the Food outlets. This happens through farmers delivering to the Food outlets as well as the food outlets visiting small scale fish farmers at their homes. Then food outlets will then sell to consumers after adding some value through deep fat frying or boiling (selling cooked fish). Food outlets is one of the channels frequently used by the fish farmers to sell their tilapia fish with it having 17 percent of the respondents indicating that they use it.

5. Marketing Channel IV (retailer shops)

Marketing Channel IV small scale fish farmers sell their tilapia fish to the retailer shops. On this channel fish farmers deliver fish to the retailer shops nearby as well as the retailer shops visit the fish farmers at their homes. Retailer shops then sell the fish later to the final consumers by selling at their outlets. This channel has the least percentage of the respondents using it with 9 percent using it to sell their fish.

6. Marketing Channel V: Farmers → vendors / middleman. In this channel farmers sell tilapia to the middleman/vendors. This happens through middleman/vendors visiting the small-scale fish farmers at their homes, farmers directly sell tilapia to the middleman/vendors in traditional markets. Vendors are one of the channels that are used by the farmers to distribute their fish with 13 percent of the respondents indicating that they are using that channel.

4.6 FACTORS AFFECTING CHOOSE OF MARKETING CHANNELS BY SMALL SCALE FISH FARMERS.

Binary regression estimates of marketing channel choice

Small-scale fish farmers in Zimbabwe utilized a binary regression model to estimate the parameters of the factors influencing their choice of marketing. The SPSS statistical software

was used to evaluate the parameters and marginal effects. At the 1% significant level, the Chi-square value of 83.1435 was highly significant. This demonstrates that the explanatory variables used in the model to explain the farmers' choice of marketing channel were interdependent. 90.6% of the cases were properly predicted, and the Mcfadden value was 0.55.

The results of the binary regression as well as the marginal effects are presented in the table below. From the results, age, level of education, farm size, legal requirements, distance to market, price of fish were significant factors determining farmer's choice of marketing channel in the study area.

Table16: binary regression estimates for the choice of marketing channels by small scale fish farmers in Zimbabwe:

| Variables | Coefficient | Z | Marginal effects |
|---------------------------------|-----------------|----------|------------------|
| Constant | -5.51479 | -1.87810 | |
| Age | 2.1818061 | 2.3750 | 0.2162350 |
| Sex | 0.5415240 | 1.27760 | 0.1061520 |
| Level of education | 0.495169 | 2.21810 | 0.0970460 |
| Mode of payment | 2.37693e-17 | 0.18480 | 4.65937e-080 |
| Household size | 0.0007602410 | 0.004601 | 0.00014903 |
| Farm size | 1.860940 | 2.45950 | 0.3922490 |
| Contract | 0.5034110 | 0.61410 | 0.0964380 |
| Legal requirements | 2.22743 | 2.07450 | 0.49659901 |
| Need for refrigeration | 1.03105 | 1.2483 | 0.214342 |
| Distance to market | -0.0494576 | -2.1766 | -0.06969493 |
| Produce volume required | 0.00635652 | 0.3261 | 0.00124604 |
| Speed of payment | 0.115804 | 0.1333 | 0.0226721 |
| fish price | 0.262966 | 2.6339 | 0.4515479 |
| Number of correctly predicted | 106(90.6%) | | |
| Likelihood ratio test: χ^2 | 83.1435[0.0000] | | |
| No. of observations | 117 | | |
| Note: | | | |
| Significant at 1%, | | | |
| Significant at 5%, | | | |

Age of the household head was considerably and definitely connected accompanying the choice of the shopping channel secondhand at 5% important level. The anticipation of selecting a

shopping channel increases by 26.6% for a period increase in the age of the household head. It is trusted that earlier ranchers additional has win information and knowledge and are better smart to form an study of display currents and judge channel depiction than young ranchers. The research judgment concurs that of Amaya and alwayng (2011) that suggests skilled is a beneficial connection 'tween age and the shopping channel choice.

Education level was also strongly and favorably correlated with the distribution channel that the farmer chose to use. With each successive level of fish farmer, the likelihood that a choice will be made about the marketing channel rises by 9,7%. According to one theory, education level affects a household's comprehension of marketing dynamics, which increases choices for marketing channel design, formation, and selection.

At a 5% significance level, the size of the farm played a significant role in determining the extract worker shopping channel. The likelihood of choosing a shopping channel increases by 39% for every additional hectare of farm capacity. This is causing farm proportion has a critical duty in the result process and it is likewise secondhand as a measure of resources for producers. This judgment counterparts that of Zivenge and Karavina (2012) that settled a beneficial connection middle from two points farm capacity and choice of shopping channel.

Legal requirements measured in terms of operating licenses; trading permits was a significant positive determinant of marketing channel choice at 1% significant level. Farmers with the legal requirements have access to better markets. A one percent increase in the number of farmers with these legal requirements increases the probability of making a decision on channel choice.

Distance to stock exchange was considerably and unfavorably associated with the choice of the find shopping channel by ranchers at 5% important level. The possibility of choosing a shopping channel decrease accompanying 6.9% accompanying of highest quality-kilometer increase apart to the market. This maybe cause distance acts as a emissary to stock exchange entrance by adding conveyance cost.

For one farmer, the price of fish played a 1% significant role in determining the choice of marketing outlet. For every additional USD increase in the price of the fish, the likelihood of choosing a marketing channel rises by 45%. Regarding the transaction cost, farmers are more responsive to the market price. The price of the extract at the point of production influences

manufacturers' decisions regarding how to market their products. The ruling concurs with Zivenge and Karavina (2012) as well.

4.7 MARKETING MARGINS OF VARIOUS MARKETING CHANNELS USED BY FISH FARMERS

The buying price from the farmers is \$2.50 USD per kg, the weighted average wholesale price is \$2.75USD per kg, average weighted butcheries price is \$2.75 USD per kg, the weighted average food outlets price is \$2.60 USD, the weighted average retailer shops price is \$2.50 USD per kg, the weighted average vendors/middlemen price is \$2.75 per kg and the average weighted consumer price is \$3.25 per kg.

Share to the producer (farmer's share) $\$2.50 \div \$3.25 = 0.769$ or 76.9%

Wholesaler margin $(\$2.75 - \$2.50) \div \$3.25 = 0.0769$ or 7.69%

Butcheries margin $(\$2.75 - \$2.50) \div \$3.25 = 0.0769$ or 7.69%

Food outlet margin $(\$2.60 - \$2.50) \div \$3.25 = 0.0307$ or 3.07%

Retailer shops margin $(\$2.55 - \$2.50) \div \$3.25 = 0.0153$ or 1.53%

Vendors /middleman $(\$2.75 - \$2.50) \div \$3.25 = 0.0769$ or 7.69%

Total margin= 27.67%

The calculations above show the amount of marketing margin varies according to the marketing channel for fish marketing. It can be seen from the amount of marketing margin for each different channel. The value of marketing margin received by is wholesalers, Butcheries, vendors/ middleman is greater than that of the retailer shops and food outlet. Food outlet has a greater marketing margin as compared to retailer shops. The value of the marketing margin for wholesalers, Butcheries and vendors /middleman are greater than those of food outlet and retailer shops, this could be because of marketing cost incurred in delivering fish to them (long distance involved).

4.8 SUMMARY

The chapter highlighted the findings of this study that were analyzed from the perspective of descriptive and inferential statistics with the view to assess the fish marketing channels that are

being use the small-scale fish farmers. Research outcomes that emanated from the study showed that there is a statistically significant relationship between factors influencing the choice of marketing channels by the small-scale fish farmers. Chapter four was all about data presentation and discussion.

CHAPTER 5

SUMMARY AND CONCLUSION

5.1 SUMMARY

The intentions of undertaking the study were based on an assessment on the small-scale fish marketing channels in Zimbabwe. Aquaculture is a recently identified business opportunity that has been commercialized. Given the quantitative nature of the study, the research hypothesis was used to ascertain the level of statistical significance between the independent variables as well as the dependent research variable. The research was critically evaluated from theoretical and empirical perspectives with the view to identify practical, knowledge and research gaps that the current study was meant to occupy through making contributions to the existing body of knowledge on the influential role of marketing strategy on business performance. The research was based on the application of quantitative research techniques which are subject to test of reliability and validity as well as making the results amenable to statistical inference given that data was collected from a sample of fish farmers in Zimbabwe. In line with the quantitative foundations of the current study, and explanatory research approach was used as a basis upon which the relationship between predictor and the dependent variable was ascertained. They made use of a combination of inferential and descriptive statistics as a basis for data analysis.

5.1 CONCLUSION

The study checked the determinants doing fish ranchers' desire of allocation channel in Zimbabwe. The study defined that age, degree of instruction, farm capacity, allowable necessities, distance to market and product price have existed the important cause of channel choice by utilizing fish growers. Output (cast)price previously in time or order the essential cause of market channel choice among find growers. Better rate is fault-finding to offsetting result and undertakings costs. It is furthermore inevitable for the appropriateness of the fish production trade. Developed advertise foundation and improved dossier electronics have wonderful potentials for reconstructing the salableness of produced net. The gain about as a consequence approves the provision of display foundation and mechanics supports in the form of informatics to farmers for the sustainability of the angle ranching manufacturing.

5.3 RECOMMENDATIONS

Based on the judgments from this study, it is urged that adequate display records be provided to the smallholder grower, by way of current sources to a degree enlargement executives, community boards and laborer unions. The market dossier must include contemporary charge presented by utilizing different market channels or powers, as the size seized was once noticed to really impact the smallholders' display channel choice. The study furthermore recommends peasant cooperative in the place that will enhance the negotiations between union and management capacity of the growers, as nicely as their catch introduction to stiff advantage-chains. Collective motion is encouraged because it strengthens smallholders' retail part and bargaining capacity. Farmers need to start networks therefore that they aid in giving information and advance production of appropriate acceptable fish as necessary by way of advertise. Fish farmers should more be drawn toward to communicate in enforceable contract farming or understandings, likely that maybe a way of improving ranchers' produce and guaranteeing market chance. Farmers further be going to be supported in achieve right excellent inputs in the form of cast feeds to be capable to produce correctly fine find. This will help embellish on the marketability of angle.

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