AN ANALYSIS OF FACTORS THAT TRADERS CONSIDER IN DETERMINING THE MARKET PRICE FOR COMMON BEANS IN ZAMBIA'S LUSAKA DISTRICT

A Research Report presented to the Department of Agricultural Economics and Extension of the University of Zambia.

BY

CLARA MWABA KAPUTO

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LIST OF ABBREVIATIONS

CSO	Central Statistical Office
MACO	Ministry of Agriculture and Co operative
CIAT	International Centre for Tropical Agriculture
FAO	Food and Agricultural Organization
CFU	Conservation Farming Unit
EEOA	Economic Expansion in Outlay Areas

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ABSTRACT

An Analysis of Factors that Traders Consider in Determining the Market Price for Common Beans in Zambia's Lusaka District

Clara Mwaba Kaputo
University of Zambia, 2012

Supervisor
Ms Chimai

The common beans (Phaseolus vulgaris) are the second most important legume crop in Zambia and are mostly grown by small holder farmers in Zambia. Beans are a major and cheaper source of protein for both urban and rural people and are an important legume food crop which is widely consumed countrywide among most households especially the low income households. Farmers usually grow a wide range of bean varieties that vary tremendously in grain size, colour, and shape and plant growth habit. Over the years, a lot of effort has been put in research for development to improve bean varieties, so that farmers have access to better and more productive bean varieties. It is a known fact that farmers grow a wide range of varieties, and that part of their produce is sold in the markets, but very little is known about the criteria which are used to determine the market price and choice of certain bean variety in the market (Katungi *et al* 2006).A study was carried out in Lusaka district, aimed at analyzing the common bean characteristics that influence its market price. The main objective of the study was to investigate factors that traders consider in determining the market price for common beans in Lusaka district. The structured questionnaire was the primary instrument used for data collection and also informal interviews. Descriptive statistics were generated using SPSS. Excel was used to organize Outputs.

The results showed that the following characteristics were statistically significant (at 95% confidence level) and have an influence on the market price for beans included: level of Education (P= 0.04); because the trader has market information, Cooking Time (P=0.029); this is because consumers prefer beans that take less time to cook than the one that takes long time to cook, Size of beans (P=0.02) ; because consumers preferred medium size beans to the large size beans and Colour of the Testa (P=0.017) ; because of customer preferences.

These findings have several implications. In terms of seed breeders, these results may help them to improve on the characteristics such as short cooking time, medium size and dull colour of common beans which have a significant influence on price. Farmers should be educated about the varieties with characteristics which consumers look for so as to fetch high price for profit maximisation. Traders who want to make more profit should be selling beans with characteristics such as short cooking time, medium size and dull colour of the testa.

CHAPTER ONE
INTRODUCTION

1.1 Background

The common beans (Phaseolus vulgaris) are the second most important legume crop in Zambia and are mostly grown by small holder farmers in Zambia. Beans are a major and cheaper source of protein for both urban and rural people. In Zambia, beans are an important legume food crop which is widely consumed countrywide among most households especially the low income households (FoDIS 2009). The crop is a good source of vegetable protein which can easily be a substitute for animal protein that most small scale farmers cannot afford yet critical for their nutritional welfare. It ranks second to groundnuts among the food legume crops grown in Zambia in terms of economic importance as shown by quantity and area of production and the number of households growing and consuming it (ibid, 1). Market information on bean characteristic that influence its market price is important for policy makers in order to create the basic conditions that promote investment for sustainable agricultural production, marketing and trade. Good information improves the competitiveness and efficiency of markets (Salin, Thurow and Elmer, 1996). Without necessary market information at the time it is needed for decision-making, it is impossible for the key market participants and other stake holders such as breeders, extension workers and farmers to make informed decisions.

Field Beans are produced for both domestic consumption and sale. Major areas of surplus production are in Northern, North-Western and Luapula Provinces of Zambia. Production is also found in Eastern and Central Provinces. Most farmers grow local cultivars that are favoured for their colour and taste but have low yield potential and are susceptible to pests and diseases. Of these, the pink and speckled Kabulangeti types originally imported from southern Tanzania are the most popular. The nutritional value of beans is very high. They contain 24-30 percent protein, 50-60 percent carbohydrate and are rich in calcium and iron. In the northern part of Zambia, young leaves which are rich in minerals and vitamins are also consumed as relish, i.e. eaten as an accompaniment with nshima, a thick porridge made from maize meal or cassava meal, (EEOA and MACO Information Pack, 2000).

1.2. Problem Statement

Beans are an important legume crop in Zambia and its demand has continued to increase due to a continuous increase in the Zambian population and due to the fact that the Zambian economy is still living below the poverty datum line. Statistics show that about 85 percent of people in rural and percent of people in urban areas live below the poverty datum line (Civil Society for Poverty Reduction-CSPR, 2010). Beans are a relatively inexpensive alternative source of protein in many households compared to animal or fish products (FAO, 2008). Farmers usually grow a wide range of bean varieties that vary tremendously in grain size, colour, and shape and plant growth habit. Over the years, a lot of effort has been put in research to improve bean varieties so that farmers have access to better and more productive bean varieties. It is a known fact that farmers grow a wide range of varieties, and that part of their produce is sold in the markets, but very little is known about the criteria which are used to determine the market price and choice of bean varieties in the market (Katungi *et al*, 2006). Katungi further found that bean varieties have different characteristics that could in one-way or another have an influence on their attractiveness to consumers. Following market liberalization implemented in late 1980s and early 1990s in most Eastern and Southern African countries, the role of the state marketing parastatals in the local and export markets has declined considerably, paving way for market forces to determine the prices (Katungi *et al* 2006). According to Katungi, traders set their selling prices based on what their competitors charge (competitive oriented pricing policy). The tendency of selling the product at harvest time makes traders to take advantage of low prices to purchase common bean from farmers when there is abundance. The traders set prices according to quality, variety, season, and their marketing costs (Katungi 2006). Unfortunately, farmers are price takers in most cases.

Klause et al (1987) conducted a research on quality and price determinants of secondary crops which included maize, soybeans and groundnuts. They found that in maize, the most important quality characteristics which determine the market price are moisture content, fungus content, and diseased and damaged grain content. The major characteristics for soybean are moisture content, damaged and diseased grains, foreign matters, grain quality and the shape of the grain. A premium was added to the price for clean, undamaged and big soybean grains while a discount

was offered for damaged, diseased and small soybean grains. The quality characteristics for groundnuts which are valued in the market were found to be grain size, foreign matter content, damaged and shriveled grain content. At the farm level, moisture content is also important.
Prices are charged according to the size of the grain. Price of the larger grains was higher than the price for smaller grains.

Past studies in Zambia have concentrated on the profitability analysis of beans production and on the factors affecting the adoption of new bean varieties by small scale farmers in Zambia (FAO, 2008 and Chomba *et al* 2004). Report by FAO (2008) showed that common beans production in Zambia has contributed to income increase at household level and has been profitable. The studies conducted by others which are similar to the characteristics that determine the market price for common beans are consumer preferences for common beans, Mishili et al (2009) and consumer preferences and its influence on bean market price (CIAT, 2007). To the best of my knowledge, no study has the effect of specific grain quality characteristics on grain market price in Zambia.

Adequate information is needed on the relationship between the market prices and grain quality characteristics for planning and focusing production and breeding programs. However, it has been observed that bean key players who include traders, researchers, exporters, policy makers, extension workers, farmers and processors do not have enough information about grain quality characteristics. These characteristics are vital in competitive marketing of beans. The stake holders do not have information because of lack of documented information hence need for a research to be conducted so as to provide more information which is unavailable to them. This study is therefore undertaken to assess some of the grain quality characteristics that affect the market price of beans.

1.3 Objectives

1.4 Main Objective

- To investigate grain characteristics that traders consider when determining the market price for common beans in Lusaka district.

1.5 Specific Objectives

- To determine if grain size, testa color and cooking time have an influence on the market price of common beans.
- To measure the influence of grain size, testa color and cooking time of the grain on the market price of common beans.

1.6 Rationale of the Study

Adequate information is needed on the relationship between the market prices and grain quality characteristics for planning and focusing production and breeding programs. However, it has been observed that stakeholders who include traders, researchers, exporters, policy makers, extension workers, farmers and processors do not have enough information about grain quality characteristics. These characteristics are vital in competitive marketing of common beans. The stake holders do not have information because of lack of documented information hence need for a research to be conducted so as to provide more information which is unavailable to them. This study is therefore undertaken to assess some of the grain quality characteristics that traders take into account when pricing beans. The findings of this study will provide information for the government, agricultural policy makers, researchers, farmers, bean traders and other organizations such as food processing companies.

1.7 Organization of the Report

This thesis opens with chapter one which highlights the background information about the subject. It covers the problem statement, objectives and rationale of the study. Chapter two focuses on literature review which provides some important literature on bean characteristics and its influence on the market price and consumer preferences in Zambia and on what other researchers have done within and outside Zambia. Chapter three looks at the methods and procedures used in the study. It encompasses the research design, description of the data collection procedure, sampling design and data analysis. Chapter four highlights the findings and interpretation of the findings of the study while chapter five looks at conclusion and recommendations based on the findings of the study.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

The following section provides some important literature on beans characteristics and its influence on the market price and consumer preferences information in Zambia and on what other researchers' have done within and outside Zambia.

The study conducted by CIAT (2004) revealed that bean prices varied within and across markets as well as across the bean types based on preference. In general, the wholesale prices ranged from US$0.30/kg to US$0.80/kg across the varieties. *Khaki* beans had the highest average wholesale price of US$0.50/kg, followed by *Phalombe* at US$0.46/kg. *Napilira* had the cheapest average selling price of US$0.36/kg. The study also revealed that price of beans mainly depended on its availability. However, some variety characteristics such as cooking time, grain colour and taste also had some influence on the price of the bean varieties.

Klause et al (1987) conducted a research on quality and price determinants of secondary crops which included maize, soybeans and groundnuts. The findings were that; maize, the most important quality characteristics which determine the market price are moisture content, fungus content, and diseased and damaged grain content. The major characteristics for soybean are moisture content, damaged and diseased grains, foreign matters, grain quality and the shape of the grain. A premium was added to the price for clean, undamaged and big soybean grains while a discount was offered for damaged, diseased and small soybean grains. The quality characteristics for groundnuts which are valued in the market were found to be grain size, foreign matter content, damaged and shriveled grain content. At the farm level, moisture content is also important.

Prices are charged according to the size of the grain. The price for the larger grains was found to be on the higher side than the price for smaller grains.

2.2. Beans in the Farming System

Beans are one of the important legume crops grown in Zambia. It is a cheap source of protein and it can be eaten in its fresh form or when dried. The bean leaves when they are tender are eaten as vegetables and usually as an accompaniment with nshima. Beans are a relatively inexpensive alternative source of protein in many household compared to animal or fish products. Bean production in Zambia is dominated by smallholder farmers who normally do not store significant volumes of dry beans after harvest, so the quantity in the bean trade is expected to decline steadily after the harvest (WPF, 2005). Most of the countries in Sub Sahara Africa (SSA) are affected by the seasonality of trade that typically influences the food grain prices to be low at harvest time and substantially higher in lean seasons (Osborne, 2004).

Traditionally, farmers in Region III, (Northern part of Zambia), usually plant 2 crops or sometimes 3 crops of beans a year. The first crop is inter-cropped with maize, groundnuts or cassava and seeds are planted with the first rains. The beans are planted mainly to fill in gaps in the main crop ridges or are planted on mounds. A second or main crop is planted between early January and early March depending on the farmer's judgment regarding the reliability of the rains. This crop is planted as a sole crop on ridges, or on large flat beds where the soil is light and free draining. The second crop is grown as the main food crop. The best seed is retained for planting in the following year and surplus seed is sold. In Region IIA, North, (Chama to Nakonde), beans are generally planted once in early January as a sole crop on ridges. Dry season dambo edge cultivation is undertaken on a small scale in both these Regions, where the soils remain moist or where shallow wells enable supplementary irrigation. Beans are killed by frost and seeds do not germinate when the soil is cold. The crop is planted as a sole crop into cultivated beds in August and harvested in November. Yields are low due to high temperatures in October, but prices are higher due to scarcity. Because the main crop is not usually planted until January, and because they are less suited to Regions I & II, beans are not recommended by the CFU as a 'conservation farming' rotation crop. In the major bean growing areas extension staff should concentrate on providing advice to improve yields in the second or main crop which is produced mainly for sale. An interval of 2 seasons between successive crops is necessary to avoid a buildup of pests and diseases (Growing Beans in Zambia, 2000).

CHAPTER THREE
RESEARCH METHODS AND PROCEDURES

3.1 Introduction

This chapter outlines the methods and procedures which were used to achieve the stated objectives. It gives information on the area of study, research design, sampling procedure, data collection and data analysis tools that were used in the study.

3.2 Area of Study

The study was undertaken in Lusaka district of the Lusaka province. Lusaka, the Capital city of Zambia is located along the line of rail between Kabwe town (in the North) and Kafue (in the South). The sample consisted of bean traders from Lusaka, specifically Soweto, Kalingalinga, Mtendere and Kaunda square markets.

3.3 Research Design

The research design that was used in this study was a non experimental design. This design was selected because bean traders in the target markets were not divided into groups based on the bean varieties they sell. A case study was used so as to have a deeper understanding and knowledge of the factors that influence bean prices in Lusaka district.

3.5 Study Population and Sampling Procedure

A sample of 80 bean traders was both randomly and purposively selected from the markets namely Soweto, Kalingalinga, Mtendere and Kaunda Square. Random sampling was done using market registers and in situations where market registers were missing like in Mtendere market, respondents were purposively sampled.

3.6 Data Sources and Collection Techniques

Both primary and secondary data were collected in this study. Primary data was collected from bean traders using structured questionnaires. This technique was selected because of the researcher's desire for quantitative data, which were analyzed statistically using computer software. Secondary data was collected from various organizations such as MACO, CSO and Agricultural magazines and relevant publications.

3.7 Data Analysis

The field data was analyzed in SPSS to produce descriptive statistics and the output was organized using excel. A multiple linear regression model was run to find out the effects of the variables on the price for common beans.The equation below shows the coefficients and the studied variables. A multiple linear regression model corrected for multicollinearity was run in SPSS.

3.8 Multiple Linear Regression Model

$Y = 0.546 + 0.527X_1 + 0.353X_2 - 0.442X_3 + 0.172X_4$

Where Y= price of beans X_1= colour of the beans, X_2= size of the grainX_3= cooking time for the beans X_4= taste of the beans.

3.9 Limitations of the Study

In this research, a sample size of 100 bean traders was supposed to be sampled. It was not possible to cover all the intended number of bean traders because of the limited resources. Secondly, it was difficult to collect data using structured questionnaires because some of the traders were not interested, some were busy selling while some were just illiterate so the researcher had to help in answering the questionnaires. This affected the interviewing process with the bean traders.

CHAPTER FOUR
STUDY FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents and discusses the study findings. It begins with a presentation and discussion of the demographic characteristics.

4.2 Demographic Characteristics

Table 1 below shows that of the 80 respondents, 31.2 percent were in the range of 24-30 years of age, 46.3 percent of them were in the range 31-40 which presented the majority of them and 22.5 percent of the respondents were between 41-60 years of age.

Table 1: Distribution of Traders by Age

Age group (years)	Number	Percent
24-30	25	31.2
31-40	37	46.3
41-60	18	22.5
Total	80	100

Figure 1 below shows that the majority of the traders 67.5 percent were females. This shows that most of the traders of beans at the market are women. Very few men sell in the market.

Figure 1: Distribution of Traders by Sex

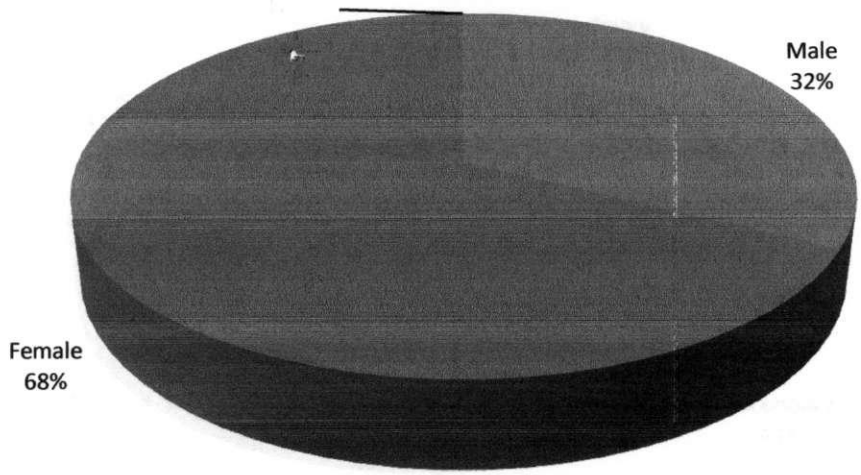

Figure 2 below shows that 15 percent of the traders had attained primary education, 43.8 percent had attained secondary education, 8.8 percent of them went up to tertiary education and 32.5 percent never attended school at all. The majority had attained secondary level of education. Some of the traders were selling in the market because they couldn't find jobs, even though they had some qualifications.

Figure 2: Distribution of Traders by Education Levels

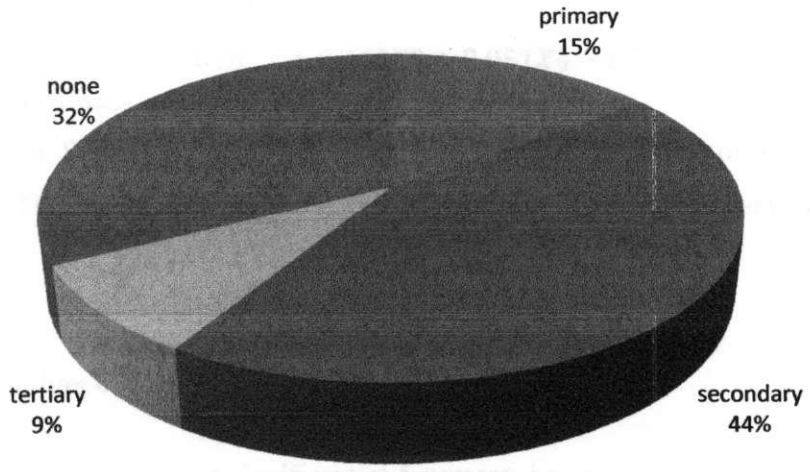

Table 2 presents the distribution of the sample by years of experience. Most traders (75 percent) had been selling for at least one year to ten years. Only a few had less than a year; same applies to more than ten years.

Table 2: Distribution by Years of Experience

Length	**Number**	**Percent**
6-12 months	8	10.0
1-4 years	30	37.5
10 years	31	38.8
0ver ten years	11	13.8
Total	80	100.0

Table 3: Regression analysis results

Multiple linear regression models

$Y = 3.931 + 0.179X1 + 0.016X2 + 0.242X3 + 0.051X4 - 0.352X5 - 0.259X6 + 0.146X7$

Y = Price of the Beans

X1 = Sex of the Trader, X2 = Age of Trader, X3 = Level of Education of the trader, X4 = Experience of the trader, X5 = cooking time of the beans, X6 = Size of the Grain, X7 = Colour of the Testa.

4.3 Interpretation of Results

From the results the model is significant at 5 percent, i.e. 69 percent of the variation in factors that affect the price of beans can be explained by the variables at 95 percent confidence. The

Variables	Coefficients	Standard Error.	P-VALUE	R - Squared
Constant	3.931	1.059	.000	0.692
Sex (Dummy Variable)	0.179	.235	.447	
Age	-0.016	.016	.295	
Level of Education	0.242	.089	.004	
Experience	0.051	.143	.722	
Cooking Time	-0.352	.230	.029	
Size of Beans (Dummy Variable)	-0.259	.197	.02	
Colour of testa	0.146	.179	.017	

Result showed that heteroskedasticity was not present.

The intercept is positive. This means that when the independent variables are constant (zero), the price of beans will be K3, 931. Implying that there other factors that would affect the price than those studied.

The level of education of the Trader showed a positive coefficient (0.242). This implies that a one year increase in the number of years of education, results in a K242 increase in the price of the beans. This could be because the trader has market information. The level of education is statistically significant at five percent.

The coefficient on the cooking time of the beans is negative (-0.352). This implies that an hour increase in cooking time decreases the price of the beans by K352. This simply shows that most consumers prefer beans that take less time to boil than the one that takes long time to cook.

The coefficient on size of the beans dummy is negative (-0.259) and significant at five percent. This shows that the large size beans decreases the price of the beans by K259. This means that most consumers preferred medium size beans to the large size beans.

The coefficient on the Color of the Testa is positive (0.146) meaning that there is a positive relationship between the color of the beans and the market price. Hence dull colored beans increases the market price of the beans by K146 compared to the white beans.

The coefficient on the experience of trading is positive (0.051). This means that there is a positive relationship between experience and the market price of beans. A one year increase in the number of years of selling beans would increase the market price of beans by K51. This could be that because the trader knows the market well and they have already available customers.

The coefficient of age of Trader is negative (-0.016) indicating that with the increase in age of the trader the market price decreases by K16 because of experience at the market level of the trader.

Opinions of Sample Traders Regarding the Variety, Price and Quantity of the Beans Sold.

Table 5 below shows that the type of beans sold by the marketeers; some traders sell one variety while others sell more than one variety. Kabulangeti had 63 percent, carioca beans 50 percent, and Solwezi 30 percent, Lukupa 15 percent, Lusaka 10 percent and the lowest was Lyambai had 5 percent. Most traders sell kabulangeti because consumers demand a lot of it. So they sell according to the variety that is demanded most.

Table 4: Varieties of Beans Sold

Varieties	Number	Percentage
Kabulangeti	50	63%
Carioca	40	50%
Solwezi	15	30%
Lukupa	12	15%
Lusaka	10	13%
Lyambai	5	6%

Table 6 below shows that the price of beans per 5kg (per meda). Kabulangeti sells at the highest price, followed by carioca, then Lusaka beans, Solwezi, Lyambai and the least is Lukupa. Therefore the variety of the beans affects the price the beans are sold at. Consumers are usually conscious of the variety they are buying that's why the prices of the beans vary per variety.

Table 5: Charge per Variety

Variety	Charge/5kg	Frequency	Percentage
Kabulangeti	K35000-K45000	35	44%
Carioca	K35000	25	31%
Lusaka	K20000	17	21%
Solwezi	K20000	15	19%
Lyambai	K15000	12	15%
Lukupa	K15000	10	13%

The table 7 below shows the quantity that most traders sell per week. Kabulangeti having the highest quantity sold per week; followed by carioca, Lyambai, Solwezi, Lusaka and lastly Lukupa. The sequence is the same as the table above for the price. The variety also affects the quantity sold and hence affects the price. Because the traders will sell the variety that is demanded and has a high price to get some returns.

Table 6 : Quantity of Beans Sold per Week for each Variety

Variety	Quantity	Number	Percentage
Kabulangeti	90Kg-150Kg	45	56%
Carioca	80Kg-100Kg	35	44%
Lyambai	30Kg-40Kg	15	19%
Solwezi	30Kg-40Kg	20	25%
Lusaka	20Kg-30Kg	25	31%
Lukupa	10Kg-20Kg	12	15%

Table 8 below shows the cooking time for each variety. The traders said the variety that takes less time to cook is kabulangeti, then carioca, Solwezi, Lusaka, Lukupa, Lyambai, and lastly Chambishi. The cooking time also affects the price as seen from the beans that cooks fast has a high price and the ones that take time to boil have lower prices.

Table 7: Variety with short cooking hours

Variety	Number	Percentage
Kabulangeti	40	50%
Carioca	40	50%
Solwezi	20	25%
Lusaka	20	25%
Lukupa	12	15%
Lyambai	10	13%
Chambishi	1	1.25%

4.4 Discussion

Comparing the results of this study with others such as Klause et al (1986), under the topic 'The quality and price determinants of secondary crops,' the results showed that moisture content, damaged and diseased grains, foreign matters and size of the grains are the characteristics that had an influence on the crops under this study: maize, soya beans and groundnuts. The study reviewed that higher prices were charged for grains that were clean, large and dried to the required moisture content.

On the other hand, the results of this study showed that medium sized grains were the most expensive among the sizes (small, medium, large) examined. Cooking time and color of the grain were other characteristics which had an influence on the price. Apart from the bean characteristics, other factors which were considered were the level of education, experience and age of the traders which have been discussed above.

CHAPTER FIVE
CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the conclusion and recommendations of the study based on the findings and interpretations of the study.

5.2 Conclusions

It can be said that bean characteristics have an influence on the market price. According to the results of this study, it can be concluded that bean characteristics such as colour, grain size and cooking time have an influence on price as they were statistically significant. Among other factors, education level of the traders had an influence as well. Experience, age and sex were not statistically significance.

5.3 Recommendations

- Farmers should be educated about the varieties with characteristics which consumers look for so as to fetch high price for profit maximisation.

- Traders who want to make more profit should be selling beans with characteristics such as short cooking time, medium size and dull colour of the testa.

- These finding may help seed breeders to improve on the characteristics such as short cooking time, medium size and dull colour of common beans which have a significant influence on price.

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APPENDICES

Case study: Lusaka District
University of Zambia

Department of Agriculture Economics and Extension Education

Survey Instrument

This questionnaire is for academic purpose only. Be assured that all the information you provide will be treated as confidential as possible. Please feel free to answer all the questions honestly. Your cooperation will be highly appreciated.

Instructions: please answer by writing or ticking in the tables, boxes and blank spaces provided.

PERSONAL INFORMATION | **Official use**

1. Name: .....

2. Age.....

3. Gender [ ]

    1. Male

    2. Female

3. Location (Market place name).....

4. Level of education.

    1. Primary [ ]

    2. Secondary [ ] [ ]

    3. Tertiary [ ]

    4. None [ ]

COMMON BEAN TRADING

5. How long have you been selling beans?

1. 6 – 12 Months [ ]
2. 1- 4 years [ ]
3. over 5years
4. over 10 years [ ]

6. Where do you buy the beans from? .....

1.farmers

2.middlemen

3. other (specify) .....

7. Who sets the price for the beans?

1. myself (trader)
2. source
3. both

8. What factors influence the price that you pay for beans to the wholesalers?

1. Variety of beans
2. Cost of production
3. Distance from the market place to the wholesalers, (farmers).

9. How many varieties of beans do you sell and what are they?

1.....

2.....

3.....

4.....

9a. Do you charge the same price for all the varieties which you sale?

0. No

1. Yes → skip to question 10.

9b. How much do you charge each variety you sale?

1.....

2.....

3.....

4.....

10. What is the quantity of beans you normally sell per week for each variety?

1.....

2.....

3.....

4.....

11. Which variety /varieties is/are most preferred by customers?

....

12. Does the colour of beans affect the preference of a particular bean type/variety?

.....

13. Does the colour affect the price of beans?

.....

14. Do customers prefer a particular grain size of beans? If so, which size do they prefer?

1. Small size

2. Medium size

3. Bigger size

15. Does cooking time affect preference of a particular variety?

.....

16. Which variety do customers say to have a shorter cooking time?

1..... 2.....

17. Does cooking time affect the pricing of your beans?

1. Yes

2. No

18. Does cooking time determine the volume of sales for any variety?

1. Yes

2. No

19. Does the flavor/taste affect the preference of a particular bean type by consumers?

1. Yes

2. No

20. How long does it take to cook beans?

1. 2 hours

2. 4 hours

3. 6 hours