

**FARMER TO CONSUMER DIRECT MARKETING: CONSUMER
PREFERENCES AND CHARACTERISTICS**

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

BY

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List of Acronyms

GPD	Gross Domestic Product
CSO	Central Statistical Office
MACO	Ministry of Agriculture and Cooperatives
SPSS	Statistical Program for Social Sciences
PYO	pick-your-own farms

ABSTRACT

Farmer to consumer direct marketing: consumer preferences and characteristic

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Marketing is one of the greatest single problems facing Zambian farmers. Most agricultural products go through several hands before reaching the consumer. As a result, costs involved in handling, storing, transporting, and distributing food products also increases

Farmer-to-consumer direct marketing is a way by which farmers sell their products directly to consumers (Henderson and Linstrom, 1982). Farmers view direct marketing as an alternative market outlet to increase their income while consumers see it as a means of gaining access to fresher, higher quality foods at lower costs (Nayga et al., 1994). The needs of consumers can be met by analyzing the direct marketing consumer behavior and purchasing patterns.

The purpose of this research was to determine how well farmer-to-consumer direct markets serve the needs of the consumer by providing an overview of characteristics of direct marketing patrons. Primary data was collected was structured questionnaires analyze factors affecting shopping, this was done in STATA.

The results indicate that place of residence, marital status, age, price and education were the most statistical significant consumer characteristics of shopping at a direct market. Consumers generally expected the quality of the produce sold at farmers' markets to be higher. Additionally, they expected to find a wider variety of produce and lower prices. Freshness and quality were the most important factors affecting their food purchasing decisions.

Survey results showed that bananas, apples, mangoes and oranges were the fruits that consumers bought most frequently at direct markets, while rape, cabbage, maize, beans, spinach, tomatoes, onions and pumpkin leaves were the most popular vegetables. With regard to methods of recognition, roadside signs, passing by and word-of-mouth were mentioned the most. The most preferred markets were farmers market and direct farm markets.

Consumers who are most likely to patronize farmers' markets tend to be female (p value=0.16), married (p value = 0.06), and live in medium density area (p value= 0.04), from higher income groups (p value=0.10), on average 35 to 49 years old (p value = 0.047) and quiet educated (p value = 0.067). The insights provided by this project are expected to help producers and managers of farmers' markets allocate their resources more efficiently to better meet consumers' needs. Moreover, patrons' demographic and socio-economic characteristics could aid marketers in the identification of potential target markets. The results will also help government improve necessary infrastructure to enhance direct marketing.

CHAPTER ONE: INTRODUCTION

1.1 Background

Agriculture is the mainstay of the Zambian economy: 72% of the workforce was engaged in agriculture in 2000 and agriculture accounted for 22% of Gross Domestic Product (GDP) in 2007 (CSO 2003a; CSO 2008). This contribution of agriculture to GDP can be increased further by identifying new marketing channels for agricultural products as well as improve the existing channels. The production of agricultural products should be demand driven, therefore it is important that farmers understand the consumers' preferences, attitudes and purchasing habits.

The Zambian agricultural sector is characterized by over 1.4 million smallholder farm households that account for a significant proportion of farm output (MACO 2009). Only about 2000 large scale farmers contribute significantly to total crop production and sales especially of wheat and sugar. The marketing system is such that smallholder traders face the underdeveloped informal marketing system while the more advanced large scale traders are part of a *formal* marketing system. While the formal system provides a broader set of risk management and mitigation mechanisms (such as commodity exchanges, forward contracting, and advanced storage technology), the informal sector, with which much of the smallholder farming community is associated, does not have such linkages (Tembo et al,2009). In order to be successful smallholder farmers may need to put in place their own risk management strategies. For farmers who supply the direct market, understanding the consumer among others may be a good strategy.

In Zambia, many growers, especially new ones, are inclined to start production without giving a second thought to the importance of marketing. Good marketing is an absolute requirement for a successful agricultural enterprise. Some would even argue that production of good quality produce is a necessary condition but not a sufficient criterion for profitability (Govindasamy, R. and R. M. Nayga, Jr., 1996). Marketing ranks higher in importance than production itself.

Most agricultural products go through several hands before reaching the consumer. As a result, costs involved in handling, storing, transporting, and distributing food products also increase especially for smallholder traders. It is often contemplated that some of these cost increases are unnecessary or that more of the middleman's profit should go to the farmer.

Farmer to consumer direct marketing is a way by which farmers sell their products directly to consumers. Through this method, farmers can sell their products directly to consumers and capture a greater share of the consumer's food expenditure and be able to increase their economic profit.

The efficiency of today's marketing depends on large scale production, which takes advantage of economies of scale, leaving the small scale farmer at a disadvantage. Direct marketing therefore remains a profitable alternative to small scale farmers. For large scale farmers it provides a means of selling products that do not meet quality or size standards required by retailers.

There are a number of outlets through which farmers sell their products directly to consumers. These are; pick-your-own (PYO) farms, roadside stands, farmers' markets, tailgating and direct farm markets. PYO operations are farms where customers come to the farm to harvest their own agricultural products. Roadside stands are mostly temporary structures erected by the farmer to sell his or her produce. Farmers' markets, on the other hand, are places where farmers bring their produce to be sold. Tailgating also known as door-to-door operations is where farmers park on a busy high way to sell their produce from the back of a truck or through the neighbors door to door, while direct farm markets are structures located at the farm used to sell their own produce. Items frequently sold through direct marketing outlets are fruits, vegetables, flowers, nursery products, eggs, and dairy products (Nayga, Fabian, Thatch and Wanzala, 1994).

In Zambia Eco-Veg farm in Chisamba is an example of a direct farm market. Kabwata Tuesday market and other similar markets is an example of farmers' market, Tailgating is done in several locations including the university of Zambia main campus.

There is a need to document various characteristics of direct marketing consumers to better serve the needs of the consumers efficiently. The needs of consumers can be met by analyzing the direct marketing consumer behavior and purchasing patterns.

1.2 Problem Statement

Dissatisfaction of the low farm-gate prices among smallholder farmers has been the order of the day and there has been a traditional concern that middlemen (so called “brief case buyers”) get most of the profit with just a fraction of retail price going to the farmer. Through direct marketing the farmer can capture a high share of what the consumer pay, which would otherwise go to the middlemen.

Despite the existence of farmer to consumer direct markets in Zambia, no information is available concerning the type of consumers who visit various types of direct market operations. There has been no concerted effort to examine characteristics of direct marketing consumers to help producers’ better serve the needs of the consumers. Consumers are a critical element for the profitability and survival of any market. Therefore, there is need to understand their motivation for shopping at direct markets among other alternatives. Having accurate and current information on consumer trends is vital for the economic viability of the farmer to consumer direct markets. The farmer therefore is not only interested in knowing the best production techniques but also the best marketing strategies and what consumers want. Through direct marketing, there is a more direct connection with the consumer which gives the farmer a clearer idea of what the consumer wants. Furthermore, knowledge of consumer preference, attitude and expectation allow farmers to plan production, pricing and marketing strategies more efficiently. The purpose of this research was to provide an overview of attitudes, preference and characteristics of consumers who shop at farmer to consumer direct markets.

1.3 Objectives

1.3.1 General Objective

The overall objective of this study was to determine the preferences and characteristics of consumers who shop at farmer to consumer direct markets.

1.3.2 Specific Objectives

Specifically, the study had the following objectives:

1. To determine consumer characteristics affecting visits and purchases in different types of direct markets;
2. To determine the main factors that drive consumers to direct markets;
3. To determine the most preferred products;
4. To determine the most preferred direct market;
5. To determine institutional factors that might affect shopping at direct markets.

1.4 Rationale

No attention has been paid to determine consumer characteristics and preferences affecting purchases at direct markets in Zambia. This study presents the first attempt in order to examine factors affecting consumer visits to direct markets. To keep up with the recent trends on consumer demand, the direct market industry must continually find new ways to appeal to specific consumer tastes and preferences. It is therefore imperative that the demographic and socio-economic profile of individuals who visit the various types of direct markets be known to the industry. The identification of consumers more likely to visit a particular type of direct market is essential in analyzing consumption behavior and developing specific marketing programs. The results of this research will help producers and managers of direct markets allocate their resources more efficiently to better meet consumer needs. Since the main players in the agricultural sector are the smallholder farmers, understanding consumer characteristics affecting their visits to direct markets will improve the living standards of smallholder farmers, hence boosting the economy.

Information gained will be useful in formulating policies and programs to maintain the loyalty of direct market customers and specifically target non customers.

Policies such as; improving roads to direct markets and other institutional facilities, may be implemented.

1.5 Conceptual Framework

When the dependant variable is qualitative in nature, ordinary least square (OLS) poses several problems in estimating such models. There are alternative approaches to developing a probability model for a binary response variable: the probit model and the logit model, both of which are convenient for dichotomous variables. Probit is particularly well suited to experimental data while logit model is for observational data (Rahm and Huffman, 1984). A logit framework will be used to estimate the probability of a consumer visiting one of the five direct marketing facilities; PYO farms, direct farm markets, farmers' markets, roadside stands and tailgates. The logit technique is preferred over other categorical variable estimation techniques (Maddala 1983) and is a better procedure for capturing the magnitude of the independent variable effects for qualitative dependant variables than probit models do (Ameniya 1983).

In logit modeling, the likelihood of visiting a direct marketing facility is a function of a set of predetermined variables. Qualitative choice models are used in the analysis because the dependant variable is binary. The logit model is estimated using maximum likelihood estimation as it results in large sample properties of consistency and asymptotic normality of the parameter estimates.

The model assumes that the probability of visiting a direct market P_i depends on a vector of independent variables X_{ijs} associated with consumer i and variable j and a vector of unknown parameter B_i . A dichotomous random variable for which $y_i = 1$ if the respondents is a direct market shopper and $y_i = 0$ otherwise (non shoppers) will be defined. For a logit, this probability is determined by

$$P_i = \frac{1}{1+e^{-Z_i}} = \frac{e^{Z_i}}{1+e^{Z_i}} \quad (1)$$

Where $Z_i = \beta_1 + \beta_2 X_i$

If p_i is the probability of shopping at a direct market then, $1 - P_i$, the probability of not shopping at a direct market is given by $1 - p_i = \frac{1}{1+e^{Z_i}}$ therefore

$$\frac{P_i}{1-P_i} = 1 + \frac{1+e^{Z_i}}{1+e^{-Z_i}} = e^{Z_i} \quad (2)$$

Now $\frac{P_i}{1-P_i}$ is the odds ratio for shopping at a direct market. It is the probability that one will shop at a direct market to the probability that one will not shop at a direct market. Taking the natural logs

$$L_i = \left(\frac{p_i}{1-p_i} \right) = Z_i = B_0 + \sum B_i X_{ij} \quad (3)$$

Is obtained, where L_i is the log of odds of shopping at a direct market, it is not only linear in X_{ij} but also in the parameters. L_i is called the logit.

1.6 Structure of the report

This research report is divided into five (5) chapters and is laid out as follows. After presenting of the study background, statement of the problem, study rationale, conceptual framework and study scope in chapter one, chapter two presents a discussion on the literature review, chapter three presents the research methodology. Study findings are presented and discussed in chapter four and the paper concludes with chapter five which contains the study conclusions and recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A lot of research has been done on factors affecting consumer preferences, attitude and visit to direct markets in America. The intensity of research in this area could be attributed to the rapid increase of these markets after the 1990s in America. Despite the existence of farmer to consumer direct markets in Zambia, no research has been done in this industry.

This chapter reviews relevant literature on factors that affect the amount of sale in direct markets, factors affecting shopping at direct markets, consumer characteristics affecting visits and purchases in different types of direct markets as well as literature on the most preferred markets and products.

2.2 Consumers' Preferences and Expectation at Direct Markets

Several factors affecting consumer preferences and expectation at direct markets have been identified in past studies. These include quality of the products, variety sold and prevailing prices at direct markets compared to other outlets.

Govindasamy et al (1996) examined reasons consumers have for shopping at direct markets. Among the factors considered by consumers when deciding where to buy food from include quality, variety of produce sold and prevailing prices at the direct market compared to other outlets. Questionnaires were mailed to 500 consumers of direct marketing facilities, identified by Rutgers Cooperative Extension. The results indicated that with regards to quality, 92% of respondents expected better quality produce at direct markets than at supermarkets, while 2% expected better quality at supermarkets than at direct markets and 6% expected the same as supermarkets. About half of respondents anticipate more variety of produce at direct market facilities than at supermarkets, while 35% expect less and 16% counted on the same amount of variety as supermarket. Prices were anticipated to be lower at direct markets according to 74% of consumers who responded. About 15% of the respondents expected higher prices at direct market facilities than at supermarkets and 11% did not expect any difference between direct markets and supermarkets.

In another study Govindasamy et al (1998) examined attitudes, preferences and characteristics of consumers who shop at farmers' markets. Similar results were found which indicated that compared to other retail facilities, consumers generally expected the quality of the produce sold at farmers' markets to be higher. Additionally, they expected to find a wider variety of produce and lower prices. The majority of respondents indicated that quality and freshness were the most important factors affecting their food purchasing decisions.

2.3 Consumer Characteristics Affecting Visits and Purchases

There are several consumer characteristics affecting visits and purchases at farmer to consumer direct markets as reviewed in literature. These include age of consumers, gender, location, marital status, ethnicity of consumer and education level.

Govindasamy and Nayga (1996) examined consumer characteristics affecting visits and purchases in different types of produce direct markets—PYO farms, roadside stands, farmers' markets, and direct farm markets—using the logit framework. The results indicate that those who bought produce for fresh consumption were 20-percent more likely to visit roadside stands than are those who did not buy for fresh consumption. Individuals' sixty-five years old or less are more likely to visit roadside stands than are those above sixty-five. Females were 18 percent more likely to visit direct farm markets than are male customers, while those with incomes below \$40,000 were more likely to visit roadside stands and farmers' markets. The results also indicate that those who reside in urban and suburban areas are more likely to visit farmers' markets.

In another Govindasamy et al (1994), indicated that the majority of the consumers fell under the age category of 36-50 years old. This was followed by the 21-35 age group, the 51 -65 age group, and the over 65 age group. Of the respondents who revealed their gender, approximately 77% were female. Most of respondents either had some college, a bachelor's degree, or graduate/professional degree. The ethnicity of 80% of the respondents was Caucasian. The remaining 20% was made up of Hispanics, African Americans, Asian/Pacific Islanders, American Indian and other ethnicity. The respondents households mostly consisted of two adults and one or two children. The ages of the adults ranged from 19 to 95.

The annual household income of 32% of the respondents was at least \$70,000, while 15% had income of \$60,000 - \$69,999 and 16% indicated their income as \$50,000 - \$59,999. Twelve percent of the respondents had household incomes were \$40,000 - \$49,999 and 14% of the respondents had household incomes of \$30,000 - \$39,999. Only 10% of the respondents indicated that their incomes below \$30,000. The majority of the respondents considered their neighborhood to be suburban. Only 17% considered their neighborhood as an urban area and 9% regarded their neighborhood a rural community.

Govindasamy et al (1998) indicated that female Consumers were most likely to patronize farmers' markets and tended to be Caucasian, from higher income groups, at least 51 years old and well educated.

Okwudili Onianwa (2005) examined factors affecting shopping at a farmer to consumer direct market. A sample of 400 consumers was selected from various types of farmer to consumer direct markets. Results indicate that education (above high school) was the most significant variable when it comes to shopping at a farmer-to-consumer direct market. Respondents with education above high school were 8.5 percent more likely to shop at a farmer-to-consumer direct market.

Another important variable was income. Although not significant by itself, the interaction between families with children and income was significant at ten-percent level. As the income of families with children increased, they were about three percent more likely to shop at a farmer-to consumer direct market. Age was positively correlated with shopping at a farmer-to-consumer direct market, suggesting that the older the consumer, the higher the likelihood of shopping at a farmer-to-consumer direct market. Older people were about 0.06 percent per year more likely to shop at a farmer-to-consumer direct market. Whites were 1.8 percent more likely to shop at a farmer-to-consumer direct market than were non-whites. In contrast to Govindasamy and Nayga (1996), males were about 1.8 percent more likely to buy at a farmer-to-consumer direct market than were females. This may be due to the fact that this study covered all types of farmer-to-consumer direct markets.

With regard to location, those who lived in metropolitan areas were less likely to buy at a farmer-to-consumer direct market unlike conclusions from previous studies. Furthermore, there was a negative but not-significant relationship between married couples and shopping at a farmer-to-consumer direct market

Buitenhuys et al.,(1983) in a study of “Consumer Purchasing Habits, Acceptance and Preferences” for direct marketed small farms Horticulture products, conducted in Maine, found that lower income consumers were more concerned with the price of the produce, while those in high income range were more concerned with the quality aspects.

Therefore, females were more likely to visit direct markets than males. The more educated respondents were more likely to visit the direct markets. The majority of the respondents were between the ages of 36 to 50 years. Older respondents were more likely to shop but they were generally young than 65 years old. The more income an individual had, the more likely they were to shop at a direct market. In some studies there was a negative relationship between married couples and shopping at a farmer-to-consumer direct market, while in others, marital status had a positive sign. Those who bought produce for fresh consumption were more likely to visit direct markets than those who did not buy for fresh consumption

2.4 Preferred Products and Preferred Markets.

There are a number of outlets through which farmers sell their produce including PYO, Roadside stands, Farmers markets, direct farm markets and tailgates. Consumers usually prefer one or two markets compared to others. Apart from markets, there are several products sold at farmer to consumer direct markets. Studies have shown that consumers demand for fruits and vegetables than other products.

Govindasamy et al (1998) examined, among other factors the most preferred products in direct markets. Survey results showed that peaches, apples, melons and blueberries were the fruits that consumers bought most frequently at New Jersey farmers’ markets, while sweet corn, tomatoes, peppers and snap beans were the most popular vegetables. In addition, baked goods, flowers, jams, jellies and preserves were the most demanded

value-added items. Participants used fruits and vegetables for fresh consumption, canning, freezing and preserving. On average, consumers spent \$16 per visit and the majority had attended between 2 to 4 different farmers' markets in 1996. The majority visited these facilities once a week, once every two weeks or once a month.

With regards to the most preferred markets, Govindasamy et al. (1994) showed that more than 60% of respondents visited one of the four direct marketing facilities in 1994 with roadside stands being visited most often. Similarly, more than three-quarters of respondents had visited direct marketing facilities in the past five years. The average consumer visited the roadside stand 2.16 times per month, direct farm market 1.85 times, farmers' markets 1.68 times, and pick-your-own facility 1.46 times per month. For those who did not visit any of these facilities, distance from the market was the most common reason cited. The average amount spent per visit was \$11.01 at roadside stand, \$13.93 at direct farm markets, and \$15.48 at farmers' markets and \$18.81 at pick-your-own facilities.

The most preferred products were fruits and vegetables. Results showed that peaches, apples, melons and blueberries were the fruits that consumers bought most frequently at, while sweet corn, tomatoes, peppers and snap beans were the most popular vegetables. The most preferred market was Roadside stands; those who did not visit any of the direct market facilities cited distance from the market as the most common reason.

2.5 Factors Affecting Amount of Sale

The amount of direct market sales is influenced by several factors. These include high per capita income, higher education level and farm agglomeration effects (percentage of land in farming).

Gandee, Brown, and D'Souza (2003) used an econometric model to analyze the influence of consumer demographic, spatial, and land characteristics upon direct farm-marketing sales in West Virginia. The study adapted generalized least squares to estimate a single regression model. The results revealed that consumer demographics, land, and spatial characteristics significantly affect the amount of direct farm-marketing sales received by farm establishments in West Virginia counties. Education and income positively

influenced marketing sales. An increase in the percentage of persons with a professional degree in a country increased the amount of sales in direct markets. Spatial factors were also found to influence sales: an increase in distance from the metropolitan area increased county direct farm-marketing sales.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter describes the methods and procedures that will be used to help in the achievement of stated objectives. The chapter also describes the study area, sample to be used and the method of collecting and analyzing data.

3.2 Study Sites

This study was conducted in Lusaka city. The target areas were Lusaka's farmer to consumer direct markets. These markets were Kabwata Tuesday market, Makeni farmers market, Eco-Veg, Malambo's farm, Roadside stands and tailgates (e.g. St Patrick's' bus station in Kabwata) in Lusaka. These areas were selected because small most smallholder farmers sell their produce directly to consumers via these markets. Kabwata Tuesday market represented farmers' markets, Mr Malambo's farm in Ngwerere and York farm represented PYO while Eco-Veg in Chisamba represented a direct farm market. Roadside stands along Kabwe and tailgates around Lusaka were study sites. These markets were selected because they were visited by consumers more frequently than other direct markets. It was easier to get the required sample size which was representative of the Lusaka population. Lusaka was selected because it is the most urban city in Zambia-most farmers sell their produce in the city because most consumers are urban. The city also has and is surrounded by farmers who sell directly to consumers. It was relatively easy to identify these markets in Lusaka and there are a concentrated number of consumers who shop at these markets compared to other cities.

The city also had a well represented population in terms of income and education level, which were some of the variables this study measured.

3.3 Sample

The population was indefinite. Therefore about 22 shoppers from each of the five markets were randomly selected as they bought. Therefore the total sample comprised of 111 respondents. 100 is the minimum sample size requirement for statistical analysis. A sample of 111 respondents was therefore representative.

3.4 Data Collection

Primary data was collected in this study. Primary data was collected through personal interviews using structured questionnaires which were carefully developed around the specific objectives of the survey. The modules in the questionnaire were as follows;

- Consumer characteristics and demographics
- Main factors that drive consumers to direct markets.
- The most preferred products and markets.
- Institutional factors that might affect shopping at direct markets

3.5 Data Analysis

The data from questionnaires was analyzed using the Statistical package for Social Sciences (SPSS) to generate tables, pie charts, and bar graphs. Microsoft excel was used to organize the outputs. The Logit model was estimated in STATA. The analysis details are given below;

A logit model was used to analyze the data. Logit is the natural logarithm of the odds in favor of a positive response (shopping at a direct market). The estimated logit is represented as

$$L_i = \left(\frac{p_i}{1-p_i} \right) = Z_i = B_0 + \sum B_i X_i$$

Where L_i is the logarithm of the odds of shopping at a direct market, X_i represents the independent variables, P_i is the conditional probability of a consumer shopping at a direct market given X_i , and β_i represents the parameters estimated.

3.5.1 Definition of Variables

The dependent variable (shopping at a direct market) was dichotomous with an assigned value of “1” for those respondents who shopped at a farmer-to-consumer direct market and “0” for first time shoppers at farmer-to-consumer direct market. The independent variables included in the analysis were age, gender, nationality, education, marital status, income, location, variety, quality and price. Age was a continuous variable and was

coded as “1” those below 35 years “2” for those between 36 and 49 years and “3” for those older than 49 year and it was hypothesized to have a positive sign. Gender was a dummy variable with male respondents = 1 and female respondents = 0, and is hypothesized to have a negative sign. Education was a continuous variable and was coded as “1” for secondary education or lower “2” college certificate and college diploma “3” for University degree or higher. The expected sign was positive, suggesting that respondents with more than high school education were more likely to shop at a farmer-to-consumer direct market. Marital status was also a dummy variable with married = 1 and unmarried = 0. Income was a continuous variable and expected to have a positive sign. Income was coded as “1” for income under K1, 500,000, “2”between K1, 500,001 and K4, 000,000, “3”for 4000,001 or more. Location was a continuous variable and was expected to have a positive sign. It was coded as “1” for respondents residing in high density areas “2” for those residing in medium density areas, “3” for those residing in low density areas. This variable was expected to have a positive sign. Expected variety was a dummy variable with ‘1’ if individual expected a wider variety at direct markets than at supermarkets or other outlets and zero if otherwise. Expected price was a dummy with ‘1’ if individual expected a higher price at direct markets and ‘0’ if otherwise. Consumption was coded as ‘1’ if the individual was buying for fresh consumption and ‘0’ otherwise.

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

Introduction

This section presents the results of the research. These include factors that drive consumers to direct markets, the most preferred market, the most preferred products, how the consumers found out about the market, this will be followed by consumer characteristics affecting visit and purchases to direct markets.

4.1 Descriptive Statistics of Variables Used In Analysis

Table below shows the descriptive statistics used in the logit analysis. About 60% of the respondents were frequent shopper (visited direct market more than four times a month), 40% only visited the direct market less than four times a month and thus were classified as non frequent shoppers.

About 43% of the respondents were less than 35 years old, of which, about 16% were non shoppers while 27% were frequent shoppers. 42% were between 36 and 50 years old, of which, 18% were non shoppers while about 24% were classified as shoppers. The rest of the respondents (14.4%) were above 50 years old, 5.4% and 9% accounting for non shoppers and shoppers respectively. In all the age groups, frequent shoppers were more than non frequent shoppers, with age group below 50 years accounting for the majority of shoppers.

In terms of residential area, about 22.5% lived in high density area, 13.5% and 9% accounting for non shoppers and shoppers respectively. There was a higher proportion of non shoppers in high density areas. 27% lived in medium density areas, of which only 3.6% were non shoppers while the majority 23.4 were classified as frequent shoppers. The rest (50%) lived in low density areas of which 22.5% were non shoppers and a slightly higher proportion (28%) were classified as shoppers.

Most of the respondents had a college education (40.5%), only 26% had a degree or higher. The rest (33.3%) had high school education or less. 13.5% of the respondents had a high school education and were non shoppers while 19.8 also had a high school education and were classified as frequent shoppers. About 12.6% of the respondents had a college education and were non shoppers while 27.9% also had a college education and

were classified as frequent shoppers. There was no big difference between non shoppers and shoppers in the degree or higher category; 13.5% and 12.6% respectively. Majority of the frequent shoppers and the least of the non shoppers were in the college education category.

About 31% of the respondents earned less that K1, 500,000 per month per of which 12.6% were non shoppers while 18.9% were frequent shoppers, 28.8% earned between K1,500,000 and K4,000,000 per month, of which 9% and 19.8% were classified as non shoppers respectively. About 40% earned more than K4, 000,000 per month of which 18% and 21.6% were non shoppers and shoppers respectively.

Table 1: Descriptive statistics

Variable	Mean of Sample (%)	Non frequent shoppers (%)	Frequent shoppers (%)	Std. Err.
Dependent Variable				
Non frequent shopper (freq_shopp~1)	39.6	39.6	60.3	0.0466385
Frequent Shopper (freq_shopp~2)	60.4			0.0466385
Independent Variables				
Age				
less than 35(age35)	43.2	16.2	27.0	0.0472358
36-49(age36)	42.3	18.0	24.3	0.0471107
50 and older(age)	14.4	5.4	9.0	0.033489
Residence				
High density area(res 1)	22.5	13.5	9.0	0.0386443
Medium density area(res 2)	27.0	3.6	23.43	0.0495384
Low density area(res 3)	50.5	22.5	28.0	0.0525592

Source: Survey data 2010

continued

Table 1 continued: Demographics

Variable	Mean of Sample (%)	Non frequent shoppers (%)	Frequent shoppers (%)	Std. Err.
Education				
High school	33.3	13.5	19.8	0.0449467
College	40.5	12.6	27.9	0.0468122
Degree	26.1	13.5	12.6	0.0418877
Monthly income				
less than K1,500,000(income 1)	0.3	12.6	18.9	0.0443018
K1,500,000-4,000,000(income2)	0.3	9.0	19.8	0.0431886
Above K4,000,000(income3)	0.3963964	18	21.62	0.0466385
Gender				
Female(sex1)	0.7	24.3	44.9	0.0443018
Male(sex2)	31.5	15.3	16.37	0.0443018
Status				
Unmarried(status1)	22.5	2.7	19.8	0.039829
Married(status2)	77.5	36.9	40.54	0.039829
Distance to market				
0 to 2Km	32.4	10.0	22.5	0.07173908
3 to 15 Km	31.5	11.7	19.8	0.07173908
16 to 30 Km	25.2	13.5	14.4	0.07173908
Above 31Km	8.1	4.5	3.6	0.07173908

Source: Survey data 2010

continued

In terms of gender, 70% of the respondents were female and only about 30% were male; 24.3% of the respondents were female and non frequent shoppers while about 45% were female frequent shoppers. 15.3% of the respondents were male non frequent shoppers while about 16% were male frequent shoppers.

In terms of marital status, 22% were unmarried while about 78% were married. Of the respondents 2.7% and 19.8% were unmarried non shoppers and shoppers respectively. 36.9% and 40.5% were married non shoppers and shoppers respectively.

Generally, non shoppers covered a longer distance than shoppers. About 32.4 % of the respondents covered a distance of two kilometers or less from their place of residence to the direct market, of which 10% were non shoppers and 22.5% were shopper. About 31.5% covered a distance of three to fifteen kilometers, of which 11.7 and 19.8 were non shoppers and shoppers respectively. Those who covered a distance of sixteen which to thirty kilometers were 25.2% of which 13.5% and 14.4% were shoppers and shoppers respectively. Those who covered a distance of more than 31Km were only 8.1%. In this category, the majority (4.5) were shoppers while only 3.6% were non shoppers.

Most of the respondents (86%) used the purchased fruits and/or vegetables for fresh consumption; 35.1% were non frequent shopper while 51.35% were frequent shoppers. Only about 14% preserved and/or processed, of which only 4.5% were non shoppers while 9% were frequent shoppers.

Table 1 continued: Preferences

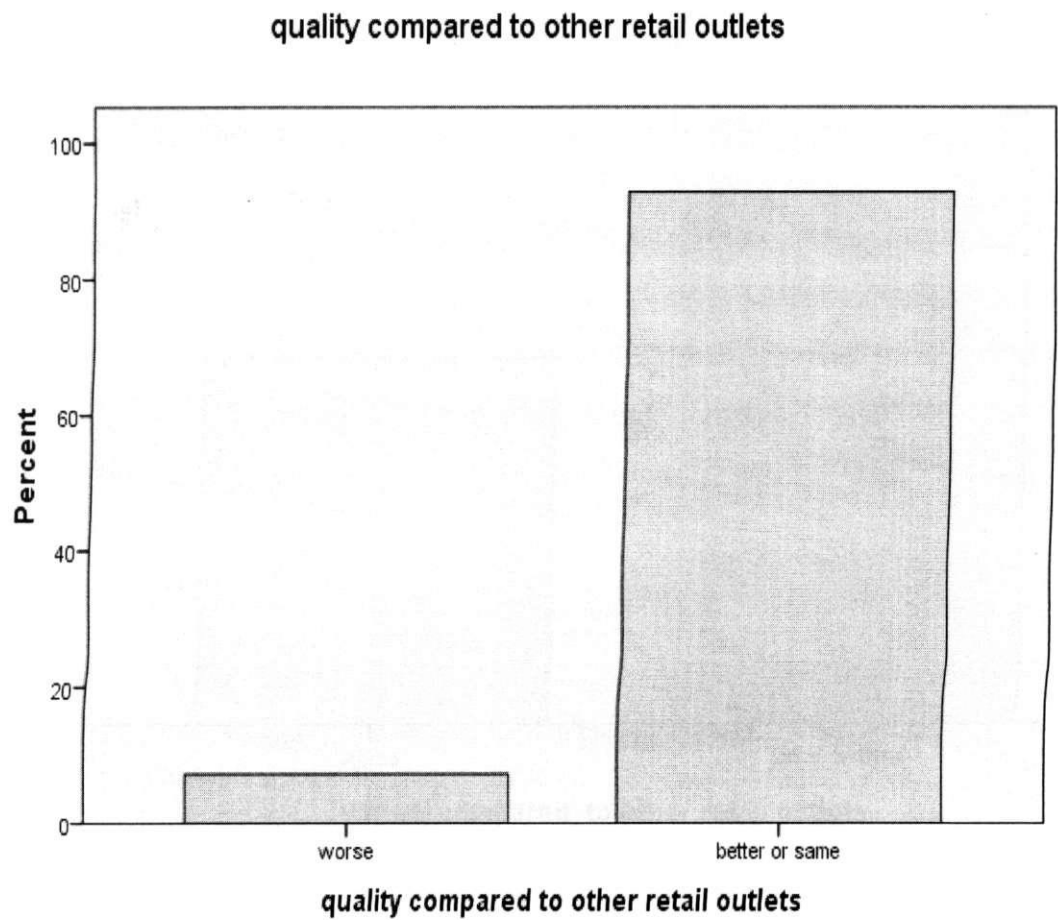
Variable	Mean of Sample	Non frequent shoppers (%)	Frequent shoppers (%)	Std. Err.
Quality expectation				
Worse (quality1)	7.20721	2.7	4.5	0.0246572
Better or Same (quality2)	92.79279	36.9	55.8	0.0246572
Variety Expectation				
Worse(variety1)	33.33333	16.2	17.1	0.0449467
Better or same(variety2)	66.66667	23.4	43.24	0.0449467
Price Expectation				
Lower(price1)	72.07207	31.5	40.5	0.0427766
Higher or same(price2)	27.92793	8.1	19.8	0.0427766
Freshness Expectation				
Lower or Same (fresh1)	0.1351351	6.3	7.2	0.0325958
Higher(fresh2)	0.8648649	33.3	53.1	0.0325958
Use of product				
preserving (consump1)	0.1351351	4.5	9.0	0.0325958
Fresh consumption(consup2)	0.8648649	35.1	51.35	0.0325958

Source: Survey data 2010

4.2.1 Expectations of Quality, Freshness, Variety and Prices of Direct Market Produce Compared to other Retail Facilities

The overwhelming majority (92.7 percent) indicated that they expected the quality of the produce sold at direct markets to be better or the same compared to at other retail outlets of which 37% were non shoppers while about 56% were shoppers. Only 7.3 percent anticipated it to be the worse, 2.7% and 4.5% accounting for non shoppers and shoppers respectively (Figure 1).

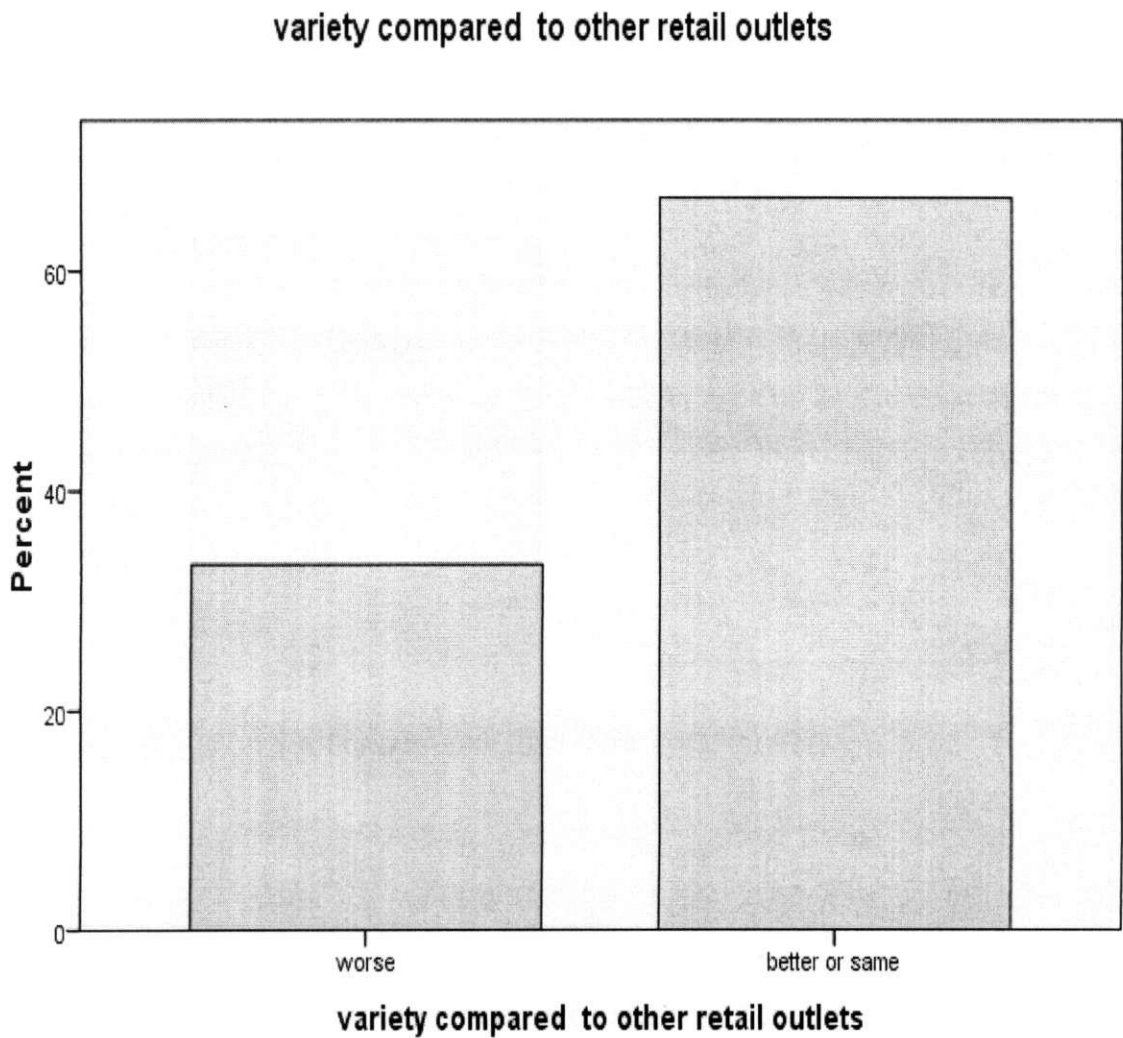
Figure 1: Rating of Quality



Source: Survey data 2010

In terms of variety, 66 percent of the respondents expected a wider variety of fruits and/ or vegetables at direct markets of which 23.4% were non shoppers while 43.24% were shoppers, while 33% expected less variety at direct markets than at other marketing facilities of which 16.2% were non shoppers and 17.1% were shoppers (Figure 2).

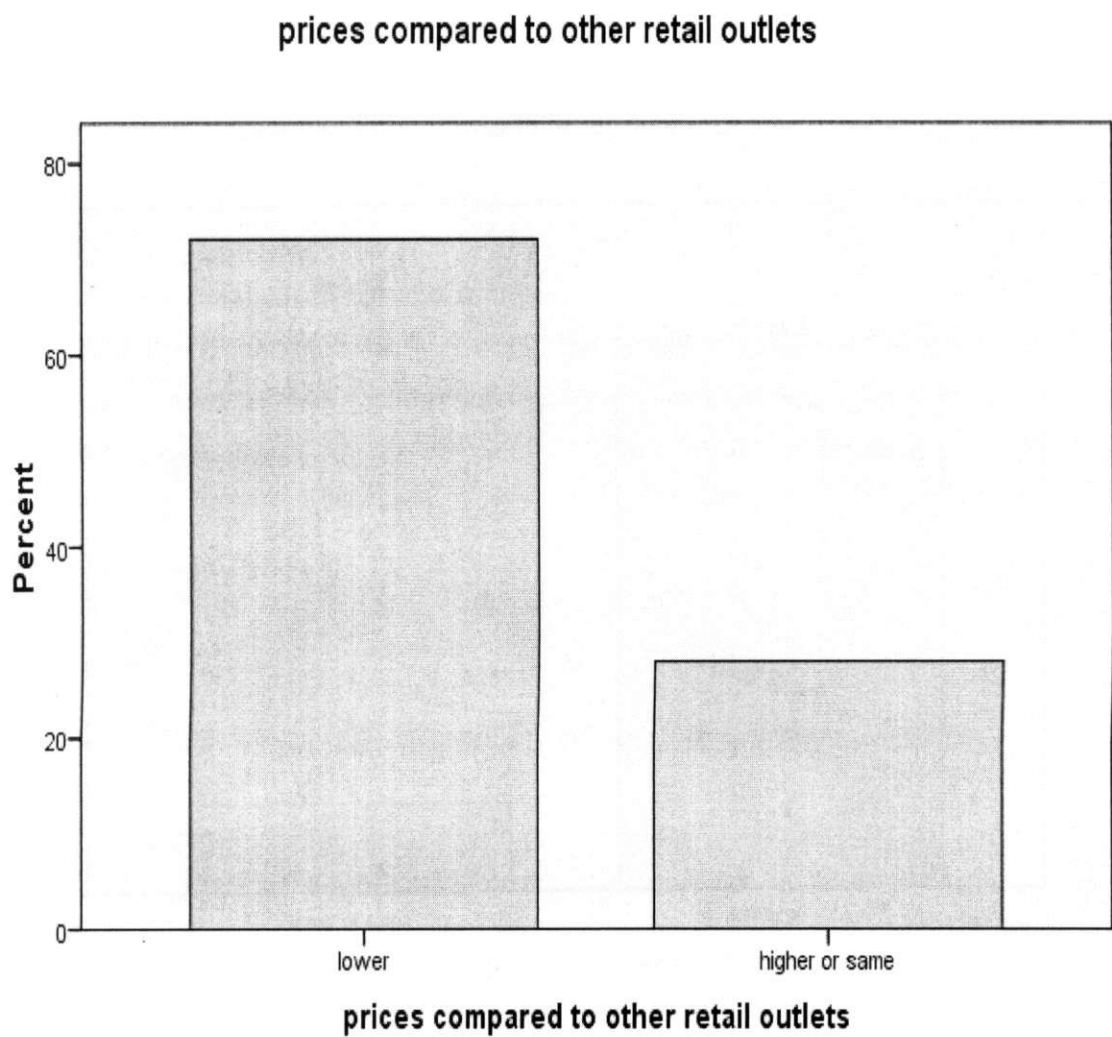
Figure 2: Rating of variety



Source: Survey data 2010

Approximately 72 percent of survey respondents expected prices to be lower of which 31.5% were non shoppers and 40.5% were shoppers, while 28 percent anticipated higher prices at direct markets than at other outlets, of which 8.1% were non shoppers while 19.8% were shoppers (Figure 3).

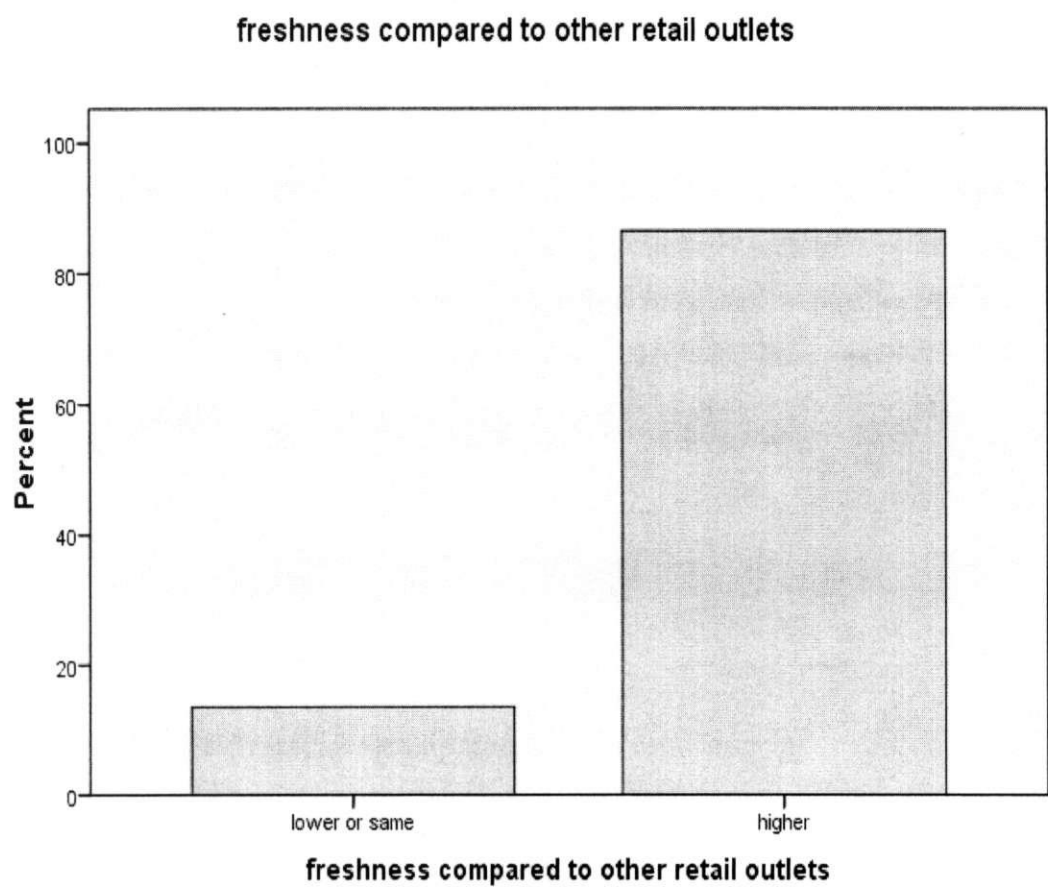
Figure 3: Rating of Prices



Source: Survey data 2010

In terms of freshness, 86 percent of the participants expected products to be fresher than at other retail outlets of which 33.3% were non shoppers and 53.1 were classified as shoppers, while only 13% expected the same or less freshness at direct markets compared to other marketing facilities of which 6.3% and 7.2% were shoppers and non shoppers respectively (Figure 4).

Figure 4: Rating of Freshness



Source: Survey data 2010

4.3 Consumer Characteristics Affecting Visits and Purchases In Different Types of Direct Markets

This section presents the results on consumer characteristics affecting visits and purchases in different types of farmer to consumer direct markets. The results were estimated using a logit model as presented in table 5. Logit is preferred because it is a better procedure of capturing the magnitude of independent variable effects for qualitative dependent variable than probit model. The model correctly predicted 66.5 percent of the responses as either frequent shoppers or not. The estimated results were interpreted using the changes in probability

The maximum likelihood estimates for direct markets logit analysis are shown in table 2.

Table 2: Logit regression results

Variable	Coefficient.	Std. Err.	P>z	Change in probability
Sex1	0.6858378	0.5637833	0.224	0.1575057
Age35*	-1.492912	0.8415062	0.076	-0.3313217
Age36	0.5415429	0.7468133	0.468	0.1217054
Residence1	-0.9436244	0.7614065	0.215	-0.2226448
Residence2**	1.882873	0.7120952	0.008	0.4193667
Status1**	2.414776	0.8027347	0.003	0.3925068
High school	-1.336881	0.8545809	0.118	-0.2689775
College*	1.190476	0.6950246	0.087	0.2505099
Income1	-0.0601055	0.7218576	0.934	-0.0134352
Income2	-1.093054	0.778884	0.161	-0.25423
Variety2	0.7165284	0.5770248	0.214	0.1641232
Fresh2	0.771761	0.7590716	0.309	0.1832505
Quality2	1.060669	0.9845178	0.281	0.193737
Price2*	-1.104325	0.6012797	0.066	-0.2215424
Consump2	0.3245852	0.7004857	0.643	0.0692212
Distance**	-1.82781	0.752087	0.015	-0.024539
Road network**	2.132309	0.819882	0.009	0.058697
Facility	1.230828	0.89328	0.168	0.021322
Cleanliness*	1.334961	0.720949	0.064	0.021647
_Cons	-0.6332384	1.381929	0.647	-
Number of obs	111			
LR chi2(15)	38.75			

** and * denote statistical significance at 5 percent and 10 percent respectively

Source: own survey data (2010/11)

continued

Table 2 continued

Variable	Coefficient.	Std. Err.	P>z	Change in probability
Probability > chi2	0.0007			
Pseudo R2	0.2600			
Log likelihood	55.161633			
Marginal effects after logit Y = Pr (frequent shopper) (predict, p)	.66514534			

** and * denote statistical significance at 5 percent and 10 percent respectively

Source: own survey data (2010/11)

The results are generally consistent with the literature reviewed. The table shows that status was the most significant variable when it comes to shopping at a farmer-to-consumer direct market. The change in probability suggests that respondents who are married are 39.2% more likely to visit the direct market than those who are not married; this was significant variable at the five percent level

Another important variable is place of residence which was significant at 95% confidence level. The change in probability suggests that those who reside in medium density areas are 41.9% more likely to visit the direct markets than those that reside in low density areas. Though not significant, those who reside in high density areas are 22% less likely to shop than those who reside in low density areas. This could be because people in low density areas would rather buy their fruits and vegetables from super markets because they are convenient as shopping can be done after sunset. On the other hand, people in low density areas would rather buy from open markets which are close to their residences and where prices are perceived to be low.

The results also indicate that individuals who are 35 years or young are 33% less likely to visit a direct market than those who are older than 35 years.

Individuals who have a college education (diploma or certificate) are 25% more likely to visit the direct market than those with a degree or higher. Important to note is the fact that individuals with a college education are also more likely to visit the direct market than those with high school education or lower as hypothesized. Though not significant, Individuals with high school education are 26.9% less likely to visit a direct market than those with higher education,

Those who expect the price to be higher or the same compared to other retail outlets are 22% more likely to visit a direct market than those who expect the price to be lower. This was significant at ten percent confidence level. These results are due to the fact that low price is not a main driver of consumers to direct market. Consumers are driven to direct markets by freshness and quality of the products; price is the least among the factors drive consumers to direct markets.

With regards to institutional factors; distance to facility, road network and cleanliness of the facility were the major determinants of shopping or not at a direct market.

Distance was significant at 95% confidence interval. An increase in distance by 1% reduces the probability of shopping by 2.4%. A one percent increase in the satisfaction of a road network to a direct market increases the probability of shopping by 5.8%, this was significant at 95% confidence interval. A one percent increase in the cleanliness of the facility increases shopping probability of shopping by 2.2%, this was significant at 90% confidence interval. Though not significant, a one percent increase in the perception of the appearance of the facility increased the probability of shopping by 2%.

4.4 FACTORS THAT DRIVE CONSUMERS TO DIRECT MARKETS

In order to determine which factors play an important role when consumers decide where to shop for their produce, survey participants were asked to indicate how they valued convenience, price, quality and freshness on a scale of very important, important or not important.

Table 3: Drivers to direct Markets

Variable	Not Important	Important	Very Important	Total
Freshness	1.8	36.9	61.3	100
Quality	5.4	63.1	31.5	100
Convenience	17.1	45.0	37.8	100
Price	29.7	33.3	36.9	100

Source: Survey data 2010

As indicated in table 3, a number of factors were associated with shopping at direct markets and these included, freshness, quality, convenience and price only 1.8 percent of the respondents thought freshness was not important while the majority (61.3%) said freshness was a very important determinant of shopping at the direct market than at other facilities. About 31.5 percent indicated that quality was very important and only 5.4% said it was not important. About 37% percent indicated that convenience of location was very important in determining whether or not to shop at a direct market and only 5.4% said it was not important. As for price, a relative majority (29.7%) indicated that it was not a very important determinant while 36.9% said it was important. Therefore the most important factor that drive consumers to direct markets is freshness followed by quality, convenience and price in that order

4.5 Most Preferred Market

As indicated in table 4, the most preferred market is farmers market with 26.1% of the respondents then direct farm market with 25.2%, tailgates follow with 21.6% and pick your own with 18%. Roadside stands are the least preferred with only 9.0% of the respondents preferring them

Table 4: Preferred Markets

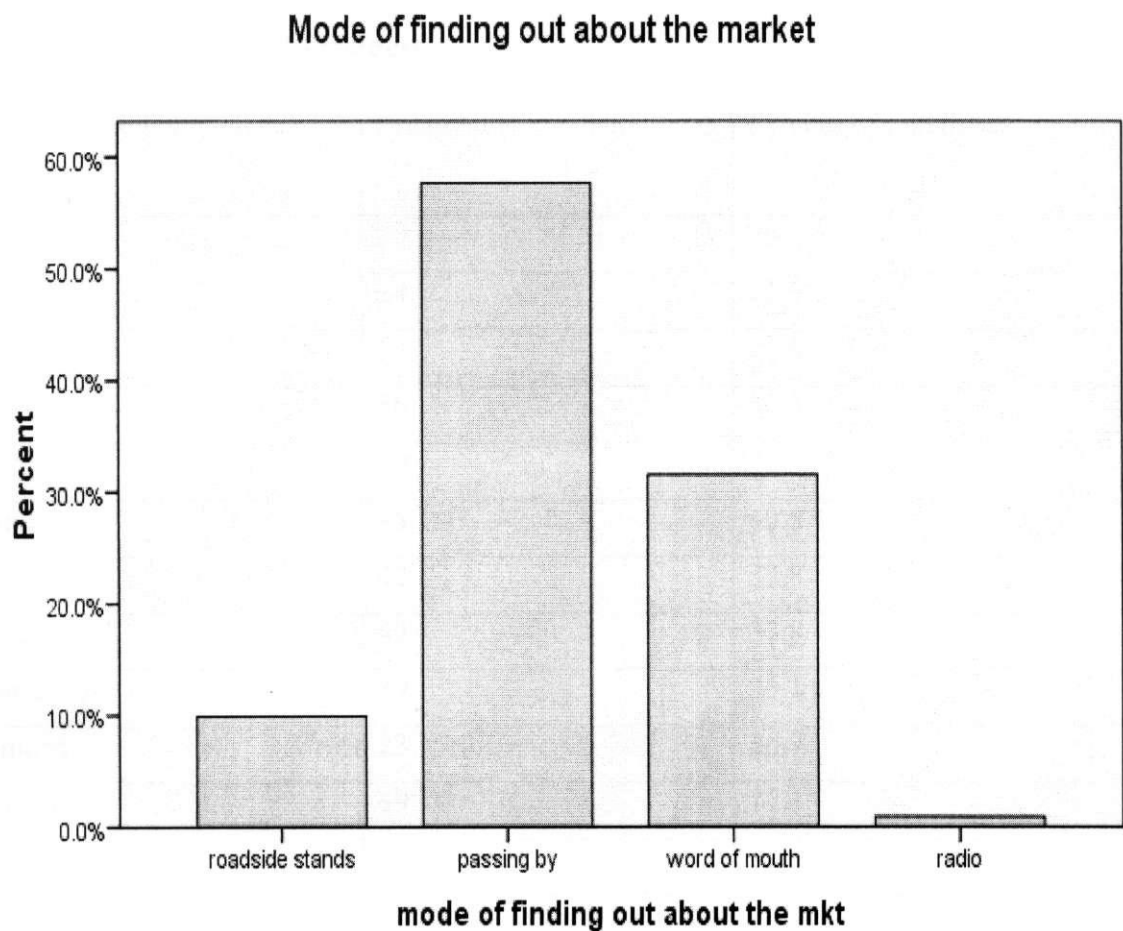
Market	Frequency	Percent	Cumulative Percent
farmers market	29	26.1	26.1
Pick your own	20	18.0	44.1
tailgates	24	21.6	65.8
roadside stands	10	9.0	74.8
Direct farm market	28	25.2	100.0
Total	111	100.0	

Source: survey data 2010

4.6 Awareness of Direct Market

Consumers were asked how they became aware of the direct markets they patronize. In general, participants indicated more than one method of recognition, but according to their answers, it is apparent that some advertisement tools are more effective than others (Figure 5).

Figure 5: Mode of Awareness



source:survey data 2010

The breakdown, based on 111 responses, is as follows: passing by (57 percent), word of mouth (31.5 percent), roadside signs (9.9 percent), radio (0.9 percent)

The most effective mode was passing by followed by word of mouth. This implies that the location of the market, the package/display of the products and consumer satisfaction play an important role in the visitation of a direct market

4.7 Most Preferred Products

Table 5 shows the most preferred products. Fruits and vegetables were preferred with vegetables being the most preferred.

Table 5: Most Preferred Products

Fruits /Vegetables	Frequency	Percent of responses
Bananas	29	26
Apples	24	21.6
Oranges	24	21.6
Rape	56	50.5
Cabbage	50	42.3
Maize	45	40.5
Beans	42	37.8
Spinach	42	37.8
Tomatoes	39	35.1
Onions	23	20.7
Mangoes	19	17.1
Pumpkin leaves	14	12.6

Source: Survey data 2010

According to the responses of 111 survey participants, the fruits most frequently bought were the following: bananas (n=29), apples (n=24), oranges (n=24).

With respect to vegetables, the following were noted: rape (n 56), cabbage (n=50), maize (n=45), beans (n=42), spinach (n=42), tomatoes (n=39). Onions (n=23), mangoes (n=19), pumpkin leaves (n=14). Other fruits and vegetables indicated in small quantities were broccoli, okra, water melons, pineapples, potatoes, baby marrow, carrots, lettuce and eggplant (Table 5).

CHAPTER FIVE: CONCLUSION AND RECOMMEDATIONS

5.1 Introduction

This chapter shows the conclusion and recommendations of the study based on the findings and interpretation of the study

5.2 Conclusion

The results of this study provide insights into the factors that affect shopping at a farmer-to-consumer direct market. With regard to shopping at a farmer-to-consumer direct market, marital status was the most significant variable.

Married Consumers were more likely to shop at a farmer-to consumer direct market, and this was significant at the five-percent level.

Age was another significant variable, those who are older than 35 years were more likely to shop at a direct market than those who were younger.

In terms of residential area, about 22.5% of the respondents lived in high density area, 27% lived in medium density areas, and 50% lived in low density areas. Those residing in high density areas were less likely to shop at a direct market than those in low and medium density, while those medium density areas were more likely to visit the direct market than those in low density area. This means that residents in medium density areas were the major patrons.

Most of the respondents had a college education (40.5%), only 26% had a degree or higher. The rest (33.3%) had high school education or less. Majority of the frequent shoppers had at least a college education.

Those who expect the price to be higher or the same compared to other retail outlets are more likely to visit a direct market than those who expect the price to be lower. These results are due to the fact that low price is not a main driver of consumers to direct market. Consumers are driven to direct markets by freshness and quality of the products; price is the least among the factors that drive consumers to direct markets.

Individuals who expected a higher variety and females were more likely to shop at a farmer-to-consumer direct market than those who expected a lower variety and males. However, their relationships were not significant. Though not significant, individuals earning less than K4000, 000 were less likely to visit a direct market compared to those who earned more

Therefore a typical direct market shopper is female, older than 35 years, married, has a college diploma or certificate, lives in medium density area and earns more than K4, 000,000.

With regards to institutional factors; distance to facility, road network and cleanliness of the facility were the major determinants of shopping or not at a direct market.

An increase in distance by reduced the probability of shopping by at a direct market. Consumers who were satisfied with the road network and accessibility were more likely to visit the direct markets than those who were not satisfied. An increase in the cleanliness of the facility increased the probability of shopping .

Compared to other retail facilities, consumers generally expected the quality of the produce sold at farmers' markets to be higher. Additionally, they expected to find a wider variety of produce and lower prices. The majority of respondents indicated that quality and freshness were the most important factors affecting their food purchasing decisions.

With regards to the most preferred markets, the survey results showed that about 60% of respondents visited one of the five direct marketing facilities in 2010 as frequent shoppers with farmers' market and direct farm markets being visited most often. This was followed by tailgates and picks your own. Only a few visited roadside stands.

The most effective mode of awareness of a direct market was through 'passing by' followed by word of mouth, roadside signs and the least was through radio. This implies that the location of the market, the package/display of the products and consumer satisfaction play an important role in the visitation of a direct market.

The most preferred products in direct markets. Survey results showed that bananas, apples, and oranges were the fruits that consumers bought most frequently at direct markets, rape, cabbages, maize, beans, spinach, tomatoes, and onions were the most popular vegetables.

5.3 Recommendations

Farmers should be encouraged to market their products through farmers market or direct farmer markets; this will increase their sales as well as their income as most shoppers prefer these markets. Government should therefore construct new markets and develop the existing direct markets especially farmers' markets where farmers can sell their produce. The road infrastructure should be developed to shorten the distance to these markets.

Since freshness and quality are the most important factors that drive consumers to direct markets, Improvements in transport and storage facilities is cardinal to maintain freshness and quality of product

Government and other stake holders should investment in further research to determine factors affecting farmer participation in farmer to consumer direct marketing. This will enable government to understand constraints, challenges and opportunities that farmers face and hence will implement appropriate and realistic policies.

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APPENDICES

Appendix 1:

Table 6: VIF Results of the Logit Regression

Variable	VIF	1/VIF
Age35	2.83	0.352943
High School	2.8	0.356785
Age36	2.66	0.375435
Income1	2.2	0.454677
College	2.1	0.4765
Income2	2.04	0.491156
Residence1	1.86	0.536857
Residence2	1.38	0.725284
Variety2	1.3	0.771159
Status1	1.28	0.782652
Sex1	1.26	0.790921
Price2	1.26	0.796056
Quality2	1.24	0.803529
Consump2	1.12	0.892481
Fresh2	1.12	0.894993
Mean VIF	1.76	

Appendix 2

QUESTIONNAIRE

Questionnaire serial number:

--	--	--

Farmer to consumer direct marketing: consumer preferences and characteristic. The
case of Lusaka

Department of Agricultural Economics & Extension Education
The University of Zambia

This questionnaire is for academic purpose only. Be assured that all the information you provide will be treated as private and confidential. Feel free to answer all the questions honestly. Your cooperation in this regard will be highly appreciated.
Instructions: Please write your answers in the boxes & blank spaces provided.

GENERAL INFORMATION

Date: (dd/mm/yy) _____

Name of respondent: _____

District name: _____

Township _____

Direct market type: _____

Name of Enumerator: _____

DEMOGRAPHICS

- 1.1 Please indicate your age.
_____ years
- 1.2 Please indicate your gender. ____

(1=Male; 0=Female)

1.3 Are you the primary shopper of food in your household? ____

(1=Yes; 2=No)

1.4 Are you vegetarian or semi-vegetarian? ____

(1=Yes; 2=No)

1.5 Your residential area? ____

1= Higher density area (e.g. Kalingalinga)

2= Medium density area (e.g. Chilenje)

3= Lower density area (e.g. Kabulonga)

1.6 Indicate your marital status. ____

1= married

0= unmarried

1.7 Please indicate the highest level of education you have achieved. ____

0=none

1=Primary

2=Secondary

3=College certificate

4=College diploma

5=Degree or higher

1.8 What is your household monthly income?

K_____

FREQUENCY OF VISITS

1.1. Is this the first time you are visiting a direct market. ____

(1=Yes; 2=No)

1.2. If this is the first time you are shopping, please tell us why you were not visiting a direct market.

- a. _____
- b. _____
- c. _____
- d. _____

1.3. How often did you visit the following direct markets in the past twelve months?

(0= never; 1= twice a week; 2=once a week; 3=once in two weeks; 4=once a month; 5= once only)

- a) Farmers markets (Tuesday market, Makeni farmers market) ____
- b) PYO (you harvest products on your own at the farm) ____
- c) Tailgates (farmers sell their produce from the back of a truck or farmer delivering to you) ____
- d) Roadside stands (temporal shelter along the road-Kabwe road, Kafue road, c.t.c.) ____
- e) Direct Farm markets (structures located at the farm where farmers sell their own produce) ____

1.4. In reference to your answer to question 2.3, how does the number of visits compare to previous years? ____

(1=Increased 2=Decreased 3=Stayed the same)

1.5. How often did you visit other retail outlets in the past twelve months? (Super markets, open markets etc.). ____

(0= never; 1= once only; 2=once a month; 3=once in two weeks; 4=once a week; 5= twice a week)

REASONS FOR SHOPPING

- 1.6. Indicate your most preferred direct market. ____
- 1=Farmers’ markets (Tuesday market, Makeni farmers market)
- 2=PYO (you harvest products on your own at the farm)
- 3=Tailgates (farmers sell their produce from the back of a truck or farmer delivering to you)
- 4=Roadside stands (temporal shelter along the road-Kabwe road, Kafue road, e.t.c.)
- 5=Direct Farm markets (structures located at the farm where farmers sell their own produce)

- 1.7. How would you rate the following direct market characteristics? Please write the appropriate number in the blanks for each characteristic. Use the following rating:

(5= Excellent 4= Very good 3= Good 2= Fair 1= Poor)

- | | |
|------------------------------------|------------------------------|
| ____ Quality of products | ____ Variety of products |
| ____ Appearance of facility | ____ Cleanliness of facility |
| ____ Convenience of location | ____ Parking |
| ____ Employee attitude | ____ Prices |
| ____ Road network to direct market | |
| ____ Other (specify) | |

- 1.8. On average, how much do you spend each time you visited a direct market?
- K _____
- 1.9. What share of your food budget do you spend on direct market shopping
- _____ %

1.10. How do you expect the produce at the direct markets to be different from that of other retail facilities?

a) In terms of *quality* ____

(1= better; 2=worse; 3=same)

b) In terms of *variety* ____

(1= better; 2=worse; 3=same)

c) In terms of *prices* ____

(1=Higher; 2=Lower; 3= Same)

d) In terms of *freshness* ____

(1=Higher; 2= Lower; 3=Same)

1.11. Does your favorite direct market offer organically grown produce? ____

(1=Yes; 2=No)

1.12. How often do you choose organic fruits and vegetables for consumption?

(1=Never; 2=Rarely; 3=Usually; 4=Always)

1.13. How do you use the produce purchased from farmers' markets? Please indicate all that apply. ____

1=Fresh consumption; 2=Preserving 3=Canning; 4=Freezing;

5=other (specify) _____

1.14. How did you find out about the farmers' market(s) you shop at? (tick where appropriate)

☐ Roadside signs ☐ Newspaper

☐ Passing by ☐ Magazine

- ☐ Word of mouth ☐ Flyers
- ☐ Radio ☐ Television
- ☐ Internet ☐ Other (specify) _____

1.15. When deciding where to purchase produce, which do you consider most important?

(1=Not important; 2 =Important; 3=Very important)

- ☐ Convenience ☐ Price
- ☐ Quality ☐ Freshness
- ☐ Availability of organic products
- ☐ Other (specify) _____

1.16. Please indicate the commodities you buy most frequently from direct markets in a 1, 2, 3, ... order (with 1 being bought most frequently)

<u>Fruits</u>	<u>Vegetables</u>	<u>Grains</u>
___ Oranges	___ Cabbage	___ Beans
___ Apples	___ Rape	___ Groundnuts
___ Bananas	___ Broccoli	___ Maize
___ Water melons	___ Spinach	___ Soy bean
___ Pineapples	___ other (specify) _____	___ Cowpeas
___ Other (specify) _____		other (specify) _____

INSTUTIONAL FACTORS THAT AFFECT SHOPPING

- 1.17. Indicate the time you take from your home to the direct market
 _____minutes/hrs
- 1.18. What is the distance from your residential area to the direct market
 KM. _____
- 1.19. How accessible are the roads to the direct market during the rain reason.

 1= Not accessible; 2= moderately accessible; 3= Very accessible
- 1.20. How clean is the surrounding at the direct market? _____
 1=Not clean; 2=moderately clean; 3=Very clean