

**FACTORS INFLUENCING THE PRICES OF NON-SEASONAL
AGRICULTURAL PRODUCE (FRUITS AND VEGETABLES) - A
CASE STUDY OF ONGATA RONGAI.**

BY

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**A RESEARCH PAPER SUBMITTED TO THE SCHOOL OF
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DECLARATION

This is my original work and has never been presented for any degree award in any other university.

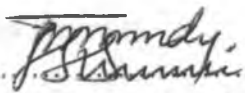
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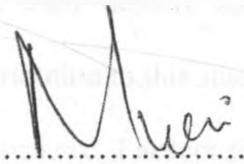
Approval

This research paper has been submitted with my approval as University Supervisor.

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DEDICATION

This paper is dedicated to my parents Joseph and Sarah Mwangi for their priceless encouragement and unceasing support. You were pillars that never caved in, even when the pressure intensified. God bless you.

ABSTRACT

Kenya's economy is predominantly agriculture based where majority of the people deriving their livelihood from agriculture are based in the informal sector, which has recorded a dramatic and sustained expansion during the last decade, but despite the expansion in informal sector employment, the proportion of people living below the poverty line has continued to increase during this period. It has been discovered that the earnings by the informal sector traders, majority of who are hawkers are typically low and often not enough to push people out of poverty. In view of the fact that pricing plays a major role in determining the profit margin of traders, it is vital that prices be set in a manner that will ensure that traders live above the poverty line. This study aims to investigate the non-seasonal Agricultural produce market in the case study area with a view to finding out what determines the prices charged on commodities. This is because prices affect the economic welfare of the traders directly since the profit margin of the traders in the informal sector has a direct bearing on economic welfare.

The study involves the use of a structured questionnaire to interview traders dealing in non-seasonal agricultural produce in the area of study with a view to finding out what determines the pricing of their products.

The study revealed that the major determinant of prices is weather, such that there exists two separate and distinct sets of prices of commodities depending to the prevailing weather akin to the cobweb model. Other significant determinants were; the total output from small-scale farmers in the region, the economic status of buyers in the region, total costs per unit of produce and the location of the business.

In order to reduce the adverse effect of hostile weather upon prices and in effect upon the economic welfare of traders, it is necessary to improve on infrastructure in the market places to make the market stalls waterproof as well as roads in the rural areas to facilitate enhanced transportation and minimize on losses.

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CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND INFORMATION

Kenya's economy is predominantly agriculture based. In terms of percentage contribution to gross Domestic Product (GDP), export earnings and employment generation, the agricultural sector is the most important sector in Kenya. Currently, the sector is estimated to contribute 27% of GDP, generates 65% of export earnings and employs 75% of the total labour force. It also accounts for 30% of the total value of all goods and services in the economy and provides the basic framework from which the bulk of the population continue to derive their livelihood.¹

Majority of the people deriving their livelihood from agriculture are based in the informal sector, which has acquired great significance over the years as a source of employment and livelihood for an increasing number of people, especially women, in both rural and urban areas of the developing world. It has particularly become a key mechanism for distributing goods and services to the urban poor. The informal sector consists of small owner operated enterprises most of them thriving outside the official regulatory framework. This sector, which by its nature is labour intensive, is highly heterogeneous, ranging from street vendors to provision kiosks, hotels, open-air motor garages, dressmaking, tailoring entities and 'matatu' operators. (Government of Kenya, 2000)

¹ Agriculture and related Development in the Seventh National Development Plan pp2 and 27.
-Kenya Dairy Development Project Preparation Report World Bank Cooperative Programme Report no. 34/93 CP-KEN 33 pp4.

Urban farming is another activity largely excluded from the definition of the informal sector in the literature of African cities. This is true even though it shares a number of characteristics with other elements of the informal economy including ease of entry, reliance on indigenous resources, small scale, labour intensive and adapted technology, lack of formal training, and unregulated markets (ILO 1972).

In a recent survey by the Mazingira institute, almost two-thirds of urban households (64%) who were interviewed grew part of their food in the urban areas where they live, or in rural areas, or both (Table 1).

Table 1

Town	<u>With access to land (%)</u>		Growing food (%)	Total urban households
	Yes (Urban)	No		
Isiolo	68 (56)	32	60 (50)	113
Kakamega	71 (51)	29	66 (51)	109
Kisumu	78 (35)	22	70 (30)	132
Kitui	81 (59)	19	79 (57)	112
Mombasa	64 (29)	36	55 (26)	332
Nairobi	71 (22)	29	65 (20)	778
All towns	71 (31)	29	64 (29)	1576

Source: Mazingira Survey.

This is broadly consistent with Freeman's data on Nairobi urban farmers' intentions to sell crops. Freeman (1991) also found that 26% of his sample had other informal sector work and concluded that a number of urban farmers, especially women, used the produce to supply their own small businesses dealing in selling cooked or uncooked food. A

recent study of Nairobi hawkers, 68% of whom were women, found that 13% of them grew their own food crops, although most of them were commuters from outside the city (Mitullah 1991).

Street traders (hawkers) are a sub sector of the Micro and Small Enterprises (MSEs) that dominate the Kenyan economy and engage in economically uncompetitive activities both in the urban and rural areas. Micro trade activities are sometimes referred to as 'survivalist' enterprises for they allow entrepreneurs to survive with hardly any savings (Mitullah 2003). Most of these enterprises operate within the informal economy. The Kenya Labour Force Survey Report of 1998/99 indicates that the sector covers all semi-organized and unregulated activities that are small scale in terms of employment. The report notes that the activities are largely undertaken by self-employed persons or employees with few workers in the open markets, in market stalls, in both developed and undeveloped premises, in residential houses or on street pavements [ROK, Labour Force Survey, 2003]. By the end of the year 2001, informal employment was estimated at 4.6 million accounting for 72 per cent of total wage employment and 81 per cent of private sector employment. [CBS, ACEG, K-REP, 1999].

During the last decade, the formal sector employment growth slackened, while informal sector employment recorded a dramatic and sustained expansion. The expansion of the informal employment has seen its share of employment, excluding employment in small scale farming activities, rise from 63.6 percent in 1997 to 70.4 percent in 2000. employment in the sector has grown by 39.0 percent during the past five years from an

estimated 3.0 million persons in 1997 to 4.2 million persons in 2000. (Government of Kenya, 2001)

Small-scale enterprises including informal sector activities are an important and growing source of employment in many developing countries, especially in sub-Saharan Africa where, according to the ILO, they provide the bulk of urban employment (61 per cent of the urban labour force), and are second only to smallholder agriculture as a rural employer.

Owing to the importance of the informal sector, a need arises therefore to look closely at the goings on in the market, a most vital tool where allocation and distribution of resources is concerned. Without a well-established market system, the process of buying and selling would be increasingly difficult if not altogether impossible, for it provides an arena both to the buyer and to the seller to meet and trade. At one level, the function of a marketplace is to enable sellers and buyers to meet and agree to terms and conditions. At another level, however, a marketplace is a mechanism for ensuring that information which might affect the terms and conditions, is readily available to all participants, so that the prices for the sales will not be unduly influenced by participants with special information or other advantages, but rather approach the theoretical price at which the market will settle. (Tomoyoshi 1994)

One of the issues that come to mind is how effective is the pricing system employed by small-scale street vendors dealing in agricultural commodities in general and in the non-

seasonal products in particular. Is the price they charge favourable in enabling them move out of poverty or is it only a tool for ensuring survival?

Prices charged for agricultural produce may vary from market to market. For instance, a single banana retailing for sh5 in the city market may be retailing for sh.3 in 'Ongata Rongai'. What brings about these differences?

1.3 STATEMENT OF THE PROBLEM

Pricing decisions can have a major and direct impact upon a firm's or trader's profitability. Small changes can have a disproportionately high effect upon the bottom line. Charging too much can lead to losses arising out of customer flight. Charging too little erodes the profit margins which in effect reduces savings. Getting the price right is therefore an important decision for the informal sector traders.

In view of the fact that pricing plays a major role in determining the profit margin of traders, it is vital that prices be set in a manner that will ensure that traders live above the poverty line. This study aims to investigate the Agricultural produce markets with a view to finding out what determines the prices charged on commodities. This is because prices affect the economic welfare of the traders directly since the profit margin of the traders in the informal sector has a direct bearing on economic welfare. It has been discovered that the earnings in the informal sector are typically low and often not enough to push people out of poverty. (Odhiambo & Manda, 2003). Thus despite the expansion of informal sector employment, the proportion of people living below the poverty line in Kenya increased from 45% to 52% between 1992 and 1997, in the city of Nairobi it doubled

during the same period, from 26% to 50% (APHRC, 2004), while more than 50% of the population of 31 million exists on less than US\$1 per day (CARE, 2002). Yet the population in the urban areas continues to increase at alarming rates rising from just under 20% of the population (3.9 million people) in 1985 to over 35% (over 10 million people) in 2002 (WDI, 2002). UN Habitat projections of future populations indicate that the percentage of the population living in urban areas will reach 44.5% by 2015, or almost 17 million people (Sanderson, 2002). To compound the problem further, the formal sector cannot absorb the rising population since in fact the informal labour segment in many ways indicates a failure of the formal segment to create sufficient job opportunities for the urban population (Odhiambo & Manda, 2003).

The only solution left is to focus on the informal sector with a view to understand the factors influencing the economic conditions. Pricing is one such condition. A need arises to look for ways in which to boost the incomes of informal sector traders so that the survivalist mentality can be eliminated and the entrepreneurial spirit nurtured. Since pricing affects income directly, for the traders to earn incomes that allow for savings, investment and capital formation, factors influencing prices need to be examined. For instance, over taxation may lead to reduced profits and consequently, lower incomes.

Unlike other commodities, agricultural commodities are perishable in nature hence passing down the rise in costs to the consumer may be counterproductive as there may be reduced demand leading to a deadweight loss.

Owing to the sensitivity of pricing in the agricultural market, and the importance of informal sector trade (hawking) to the Kenyan economy, there is a need to probe the

market in order to understand pricing dynamics and their impact upon the society's economic welfare. This will be informative to policymakers for the purposes of drawing policies that can help improve the standards of living of the informal sector players and more particularly, urban farmers dealing in non-seasonal crops and traders in Ongata Rongai.

1.3 OBJECTIVES OF THE STUDY

The main objective of the study is to investigate the agricultural product market concerned with non-seasonal commodities with a view to finding out what determines pricing in the urban agricultural product market.

The study also aims to establish if the prices charged generate enough profit to ensure sustainable economic well being of the traders- is it enough to get them out of poverty.

Finally, the study aims to come up with policy recommendations on how best the government can intervene to help the traders rise above the poverty line of 1 US Dollar per day.

1.4 HYPOTHESIS OF THE STUDY.

The main hypothesis to be tested is;

The total output by small-scale urban farmers negatively influences the prices of agricultural commodities.

HO: $\beta_4=0$

HA: $\beta_4\neq 0$

In a study by Mazingira, two-thirds of urban households grow their own food (Mazingira 1987). This is mainly for subsistent purposes. However, surplus produce may be channelled to the markets at a lower price than the market rates since the households are not keen on high profits. The presence of small-scale urban farmers will therefore negatively influence the prices in the presence of high competition.

1.5 JUSTIFICATION OF THE STUDY

With an expanding urban population and limited formal employment opportunities being created in the country, there is need to turn to the informal sector for answers to the unemployment problem. A big proportion of the players in the informal sector comprise of hawkers dealing with agricultural produce. Agricultural produce can either be seasonal or non-seasonal. The focus of the study is on non-seasonal products since they are readily supplied all the year round. Traders dealing with these products should be seen as key participants in the process of economic growth and development and not as a menace to society. As mentioned earlier, the growth in the informal labour segment indicates a failure of the formal segment to create sufficient job opportunities in the urban population (Odhiambo & Manda, 2003).

Pricing plays a major role in the determination of profits, which in turn affect the economic welfare of the traders. It is from profits that the traders save or invest in more profitable ventures. Poor pricing practices reduce the profit margin of informal sector traders making them survive with hardly any savings. This in effect causes them to

stagnate economically and continue with their survivalist techniques, which is not conducive to getting them rise above the poverty line.

CHAPTER TWO: LITERATURE REVIEW

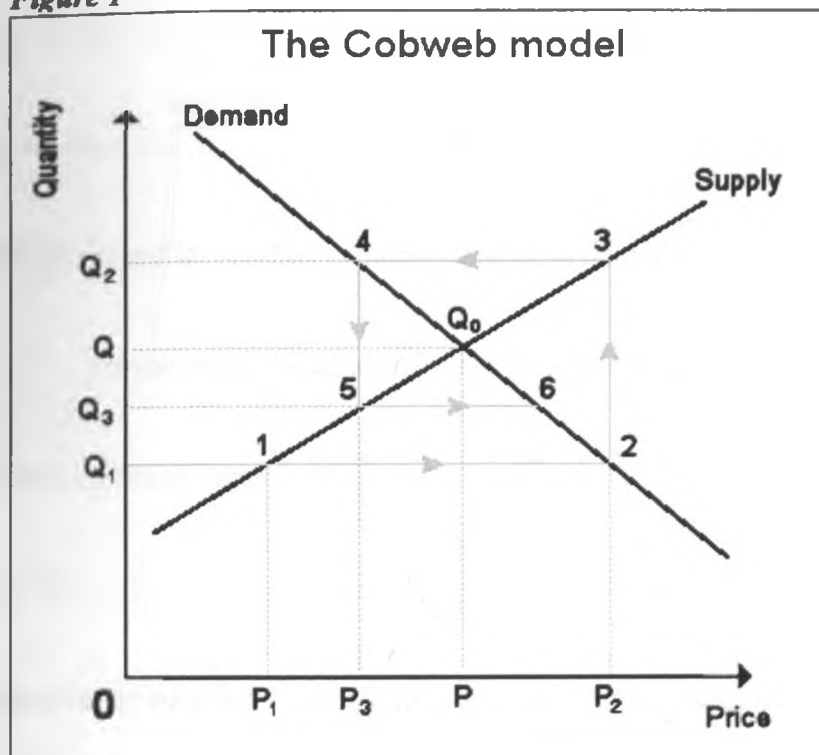
2.1 THEORETICAL LITERATURE:

One of the earliest theories of pricing common especially to Agricultural produce is the Cobweb theory. The Cobweb model developed by Nicholas Kaldor explains why prices in certain markets are subject to periodic fluctuation. It is an economic model of cyclical supply and demand in which there is a lag between the response of producers to a change of price. The classic example is that of the market for agricultural goods, such as the market for french beans. Take a case where as a result of good weather, the farm out-put of french beans goes up tremendously. This unusually high supply, equivalent to a rightward shift in the market's supply curve, results in low prices. In effect, come the following year, farmers will reduce their production of french beans in favor of other crops. If there is then a poor harvest in period 1 (1 on *Figure 1* overleaf), supply falls to Q_1 , and prices rise to P_2 , corresponding to point 2 on the diagram. Producers then start new production influenced by this high price, and in the next period (3) supply Q_2 . Prices must now fall to P_3 (point 4 on the diagram) to sell all output. The process repeats itself, until it eventually converges at Q_0 , where the system is stable.

This cycle will continue to repeat in one of three ways: If the slopes were drawn so that supply was steeper than demand (on price axis), the fluctuations would get wider and wider and fluctuations may become more and more drastic, and so a plot of the equilibriums in each period over time would look like an outward spiral (divergent). Alternatively, fluctuations may become less and less drastic, and so a plot of the equilibriums in each period over time would look like an inward spiral (convergent). Fluctuations may also remain constant (stable), and so a plot of the equilibriums would

produce a simple quadrilateral; this scenario is unlikely in the short to medium term. In either of the first two scenarios, the combination of the spiral and the supply and demand curves often looks like a cobweb, hence the name of the theory.

Figure 1



One shortcoming of this model is its assumption that producers are extremely shortsighted such that they are fundamentally unable to judge market conditions or learn from their pricing mistakes that result in surplus/shortfall cycles. This assumption is therefore quite unrealistic.

In the partial equilibrium analysis, the determination of the price of a good is simplified by just looking at the price of one good, and assuming that the prices of all other goods

remain constant. The Marshallian theory of supply and demand is an example of partial equilibrium analysis.

Assuming a linear demand and supply model, then;

$$Q_d = a + bP \dots\dots\dots(1)$$

$$Q_s = c + dP \dots\dots\dots(2)$$

Where Q_d and Q_s are the quantities of product demanded and supplied respectively.

P is the price and a, b, c and d are parameters.

The equilibrium condition is:

$$Q_d = Q_s \dots\dots\dots(3)$$

Substituting equation 1 and 2 into 3, we obtain the expression for the equilibrium price.

$$a + bP = c + dP$$

$$a - c = P(d - b)$$

$$P = \frac{a - c}{d - b} \dots\dots\dots(4)$$

we can also solve for the equilibrium quantity by substituting equation 4 into 1 to obtain;

$$Q = \frac{ad - bc}{d - b} \dots\dots\dots(5)$$

Partial equilibrium analysis is adequate when the first-order effects of a shift in, say, the demand curve do not shift the supply curve. If an industry uses little of a factor of production, a small increase in the output of that industry will not bid the price of that factor up. To a first order approximation, firms in the industry will not experience decreasing costs and the industry supply curves will not slope up. If an industry uses an appreciable amount of that factor of production, an increase in the output of that industry will exhibit increasing costs. But such a factor is likely to be used in substitutes for the industry's product, and an increased price of that factor will have effects on the supply of those substitutes. Consequently, the first order effects of a shift in the supply curve of the original industry under these assumptions include a shift in the original industry's demand curve. General equilibrium is designed to investigate such interactions between markets.

Anglo-American economists became more interested in general equilibrium in the late 1920s and 1930s after Piero Sraffa's demonstration that Marshallian economists cannot account for the forces thought to account for the upward-slope of the supply curve for a consumer good. The general equilibrium theory is a branch of theoretical microeconomics which seeks to explain production, consumption and prices in a whole economy. General equilibrium tries to give an understanding of the whole economy using a bottom-up approach, starting with individual markets and agents. In a market system, the prices and production of all goods are interrelated. A change in the price of one good, say bread, may affect another price, say sugar. Calculating the equilibrium price of just one good, in theory, requires an analysis that accounts for all of the millions of different goods that are available. The first attempt in Neoclassical economics to model prices for a whole economy was made by Leon Walras.

Walras was the first to lay down a research programme much followed by 20th century economists. In particular, Walras' agenda included the investigation of when equilibria are unique and stable. He was the first to introduce the tâtonnement or groping process into the general equilibrium theory.

The tâtonnement process is a tool for investigating stability of equilibria. Prices are cried, and agents register how much of each good they would like to offer (supply) or purchase (demand). No transactions and no production take place at disequilibrium prices. Instead, prices are lowered for goods with positive prices and excess supply. Prices are raised for goods with excess demand. The process continues until there is equilibrium in which demand equates to supply for goods with positive prices and demand does not exceed supply for goods with a price of zero.

Critics of the general equilibrium approach have questioned its practical applicability based on the possibility of non-uniqueness of equilibria. A model organized around the tâtonnement process has been said to be a model of a centrally planned economy, not a decentralized market economy.

Some critics of general equilibrium modeling contend that much research in these models constitutes exercises in pure mathematics with no connection to actual economies. There are endeavors that now pass for the most desirable kind of economic contributions although they are just plain mathematical exercises, not only without any economic substance but also without any mathematical value (Georgescu, 1979).

Although modern models in general equilibrium theory demonstrate that under certain circumstances prices will indeed converge to equilibria, critics hold that the assumptions necessary for these results are completely unrealistic. As well as stringent restrictions on excess demand functions, the necessary assumptions include perfect rationality of individuals; complete information about all prices both now and in the future; and the conditions necessary for perfect competition. However some results from experimental economics suggest that even in circumstances where there are few, imperfectly informed agents, the resulting prices and allocations often wind up resembling those of a perfectly competitive market.

2.2 EMPIRICAL LITERATURE

To better understand the nature of pricing, let us consider a perfectly competitive market in which all consumers and producers are fully informed about product qualities and prices and firms can enter or exit the market without cost. Then two products with identical combinations of attributes/product features must charge identical prices. Rosen (1974) characterizes this type of pricing equilibrium.

Let p_i denote the price of the i th brand in a given product category and $(x_{1i}, \dots, x_{ni})$ denote the levels of the objective attributes provided by the product, where the attributes can be discrete, continuous, or a combination of both. Then Rosen shows that, in equilibrium, we have:

$$P_i = f(x_{1i}, \dots, x_{ni}) \quad (i)$$

It provides the theoretical foundation for the standard hedonic regression pricing model. Rosen's model is incomplete because it assumes that the farmer does not use intermediaries (e.g. traders) to sell his product to consumers. These traders who may or may not be farmers incur various costs, which will ultimately be reflected in the final price of the commodity. More importantly, the hedonic pricing model unrealistically assumes that all consumers are fully informed about product quality and prices. This is not the case since in many instances, consumers are in the dark concerning the freshness of the produce.

It is well known that prices for a given product vary geographically across stores even if the market is competitive (Stigler, 1961). Suppose that consumers are fully informed about product quality but are not fully informed about the prices of different brands across retail outlets. Pratt et al. (1979) developed a search model where consumers knew the subjective probability distribution of prices in the market but did not know the price a particular retailer charged for any given brand. The Pratt et al. model postulates that consumers search sequentially across stores to discover the lowest price for a given product, possibly updating their beliefs about prices, using Bayes' rule. At any point, consumers can choose to quit the market, make a purchase from the set of sampled brands, or continue searching. Consumers stop searching when the expected benefit from incremental search (i.e. a price reduction) equals the expected cost of additional search. Under these conditions there is a unique price-quality equilibrium in the market. Let j index retail stores. We therefore have the equation:

$$P_{ij} = f(x_{1i}, \dots, x_{ni}) + S_{ij} \quad (ii)$$

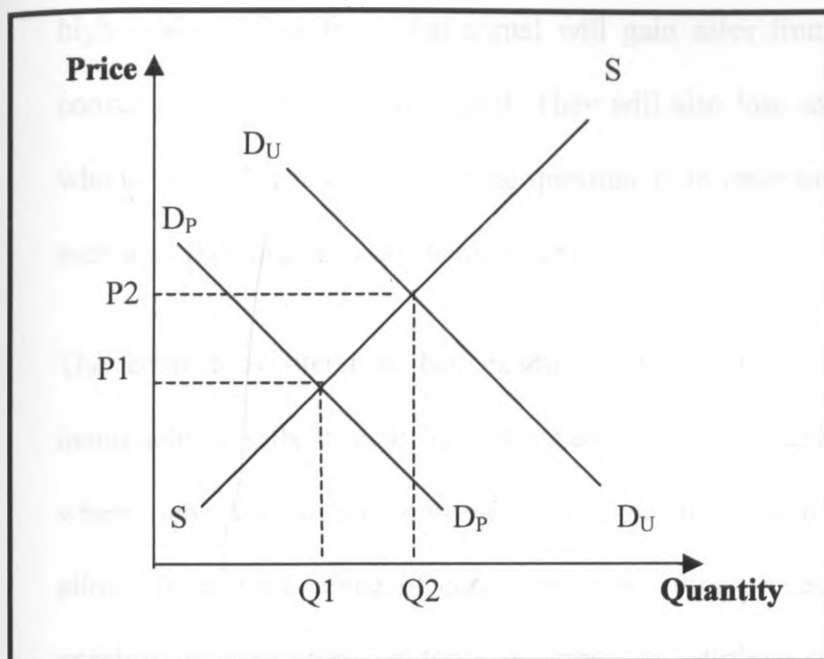
where the store effect s_{ij} captures the geographical price dispersion in the market.

Note that f represents the "average" retail price of brand i in a market where consumers are fully informed about quality but price information is costly. Furthermore, s_{ij} is not stochastic: it simply describes the equilibrium price dispersion across stores. Interestingly, it can also be derived from several other search models where consumers are uncertain about sellers' prices but not about product quality (see Butters, 1977; Salop and Stiglitz, 1977; Braverman, 1980).

Search cost models can explain the geographical dispersion of prices in a two-tier distribution structure where firms sell to retailers who, in turn, sell to consumers. However, these search models assume, unrealistically, that all consumers are fully informed about the qualities offered by different brands.

In my case however, since the area under analysis is pretty much small, prices are relatively similar for all traders hence there would be no need for a consumer to move around geographically in search of the fairest prices. However, it may be possible that prices in other markets say the prices of agricultural produce in the city centre can influence prices in the Ongata Rongai market. If prices in the city centre are cheaper, then the locals would prefer to go and do their shopping there hence the demand for the produce in Ongata Rongai would drop causing the prices to fall in a perfect market situation as shown in figure 2:

Figure 2



Where D_U represents the initial demand curve for the produce

D_P represents the shift in demand induced by cheaper prices of produce in the city centre.

Prices fall from P_2 to P_1 in the market.

As discussed before, the hedonic pricing and search cost models assume that all consumers are fully informed about product quality. Suppose more realistically that some consumers are informed about product attributes and others are uninformed. Consider the extreme case where all consumers are uninformed. Then the market will "fail" because only low-quality producers will offer their products on the market (Akerlof, 1970).

In reality, some, but not all, consumers are uninformed about quality. In such cases, in contrast to the competitive model, price can play an informational role. Specifically,

firms can attempt to appeal to uninformed consumers by using high prices as a signal of high quality. Thus firms that signal will gain sales from the segment of uninformed consumers, who believe the signal. They will also lose sales from informed consumers who go elsewhere. The interesting question is to determine if an equilibrium exists in such a market and, if so, to characterize it.

The economics literature has examined this problem in detail, assuming that the manufacturer sells directly to consumers. Wolinsky (1983) develops a search model where some, but not all, consumers are uninformed about quality. The Wolinsky model allows for a wide range of consumer information-processing strategies. For example, uninformed consumers can form judgments in "attribute space" and simply perceive the objective attributes with error. Alternatively, they can map the physical attributes to a set of unobservable perceptual dimensions (e.g. benefits) with error. Thus, the model allows for errors in perception and judgment that can vary across consumers.

In Wolinsky's model, consumers buy directly from the firm. Their search strategy is as follows. First choose a price level. Then search randomly among brands with this price level and compare marginal benefits and costs. Depending on the signal obtained (this depends on the objective attributes and the biases in consumer information-processing), consumers update their perceptions, decide to buy one of the brands examined, quit the market, or continue sampling brands.

As Wolinsky shows, prices can serve as signals that exactly differentiate the available quality levels. Each price signal exceeds the marginal cost of producing the quality it signals. The exact markup depends on the proportion of uninformed consumers in the

market and on the nature of the product-specific information received by consumers. The poorer the information, the higher the markup (Wolinsky, 1983; Proposition 2). Importantly, these results hold for search goods (e.g. consumer durables) and for experience goods where consumers make repeat purchases and update their information through experience.

Given the scenario described, Wolinsky (1983, Proposition 1) shows that there is a "separating equilibrium" where prices are given by:

$$P_i = f(x_1, \dots, x_n) + u_i \quad (\text{iii})$$

where f denotes the full-information competitive price and $u_i \geq 0$.

This model captures a key aspect of reality: some consumers are uninformed about product quality. Specifically, the model allows for general types of consumer behavior (i.e. heterogeneous perceptions and/or heterogeneous preferences), revisions of beliefs (i.e. learning), and free entry and exit by firms. However, this assumption is unrealistic because manufacturers often use intermediaries (e.g. retailers) to sell their products. In this case, farmers do not sell their produce directly to the consumer except in exceptional cases but to a middleman or trader.

For the agricultural market however, the aspect of quality is not a significant factor in differentiating traders. This is because the traders acquire their products from the same sources. Due to the perishable nature of the commodities, the differentiation through quality will not hold. For instance, a consumer will not be inclined to buy rotten items, since it is very easy for a consumer to distinguish fresh produce from inferior quality

produce, the situation envisaged by Akerlof would never exist. Bad produce would instead be driven out by good produce.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 THEORETICAL FRAMEWORK

My model is derived from the partial equilibrium analysis where the market price of a good is determined by both the supply and demand for it. In 1980, English economist Alfred Marshall published his work, 'Principles of economics', which was one of the earlier writings on how both supply and demand interact to determine price. Today, the supply-demand model is one of the fundamental concepts of economics. The point at which quantity supplied equals quantity demanded essentially determines the price level of a good.

There is only one price level at which quantity demanded and quantity supplied are in equilibrium. We therefore have two functions; the demand function and the supply function.

The demand function takes the form;

$$Q_d = D(P_n, P_1, \dots, P_{n-1}, Y, S)$$

Where; Q_d is the quantity demanded of a product say n .

P_n is the price of the product.

$P_1, \dots, P_{n-1}$ represents the prices of all the other products.

Y is the consumer income.

S =Individual specific factors e.g. Tastes, age, etc.

The supply function takes the form

$$Q_s = S(P_n, F_1, \dots, F_m)$$

Where; Q_s are quantities supplied of product n .

P_n is the price of the product.

$F_1, \dots, F_m$ represents the prices of all factor inputs into production.

The state of technology determines the form of the function S .

These functions are responsible for the slope of the demand and supply curves respectively. They interact to determine the equilibrium price and quantity in a given market.

3.2 MODEL SPECIFICATION

$$P = f(PO, TC, TO, PR, PP, S, ES, L, \epsilon) \dots (1)$$

Where P is the price of the commodity

PO is the price charged by other traders.

TC is the total costs of the commodity.

TO is the total output of produce by small-scale farmers in the region

PP is the price during the previous period.

PR is the profit.

S is the seasonal Dummy

ES is the Economic status of the target buyers.

L is the location of the business.

€ is the random error term.

THE SPECIFIC MODEL

$$P = \beta_0 + \beta_1 PO + \beta_2 TO + \beta_3 TC + \beta_4 PP + \beta_5 PR + \beta_6 S + \beta_7 ES + \beta_8 L + \epsilon$$

Where

$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 < 0, \beta_5 > 0, \beta_6 > 0$ or $\beta_6 < 0, \beta_7 > 0$ or $\beta_7 < 0, \beta_8 > 0$ or $\beta_8 < 0$.

NB: All the variables are defined in equation 1 above

Regression analysis will be conducted using the Ordinary Least Squares (OLS) method.

A regression of the factors influencing prices will be ran on all the eight explanatory variables so as to provide the individual effects of each variable on prices. The study will employ the use of the Statistical Package for Social scientists (SPSS) for data analysis since the data to be collected is qualitative in nature.

Correlation analysis will also be carried out to test the relationship between the variables as well as to establish the strength of linear association between these variables.

3.3 SCOPE AND LIMITATION OF THE STUDY

The study focuses on markets in Ongata Rongai Location situated 24 kilometres from Nairobi city centre. The location was chosen due to the proximity to the city centre, which has seen an escalation of the population as people move from the main city to the

peri-urban areas. There is a large presence of street vendors (hawkers) spread across the markets as well as the roadsides.

The research will heavily rely on data collected from traders through interviews designed to capture the factors that determine pricing of their products. Due to the multiplicity of products offered in the market, the study will focus mainly on three commodities namely: Bananas, Tomatoes and Onions. These are the main commodities offered for sale by the vendors and hence capture a big segment of the market. They are also relatively easy to quantify hence convenient in drawing generalizations about the market.

3.4 DATA TYPES AND SOURCES

The study will rely mainly on primary data collected from the area under study. It will involve oral interviews guided by a structured questionnaire (see annex1)

The research team comprising the researcher and two assistants will conduct face to face interviews on the traders in their area of operation.

3.5 SAMPLING PROCEDURES

The research shall involve the use of simple random sampling techniques. The entire sample size shall be one hundred respondents.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

This chapter discusses data presentation and analysis. It starts with descriptive statistics of the data. The study further gives the empirical results of the OLS estimation.

4.1 Descriptive statistics

This section presents and discusses sample statistics. In the study there were a total of 126 observations where 76% comprised females and 24% males. Each trader was interviewed on the factors influencing the prices of the produce they sold specific emphasis being on the prices of Tomatoes, Onions and Bananas.

The frequencies and percentage of dummy variables used are summarized in table 2 below.

Table 2: Frequency distribution for dummy explanatory variables

Explanatory variables-dummies		Frequency	Percentage
location	market	50	39.7
	otherwise	76	60.3
collusion	collude	42	33.3
	Don't collude	84	66.7
Source of produce	Rural	98	77.8
	Urban	28	22.2
Economic status of buyers	Rich	12	9.5
	Middle class	107	84.9
	Poor	7	5.6

Source: Authors computation

The table reveals that most of the produce is obtained from the rural areas. Majority of the traders (73%) obtained their stock from Marigiti market in Nairobi, which was a hub for produce coming from the rural areas. A significant proportion of produce (22%) was

however supplied by farmers from the neighbouring *Kiserian* and *Kandisi* farms. This reveals that farming is no longer a preserve for rural farmers. Urban agriculture is widely practiced and due to the absence of many middlemen, the produce grown locally is much cheaper and many traders are slowly changing suppliers to capitalize on this.

According to the traders, most of the buyers (85%) could be categorized as falling in the middle class category. Rich buyers were known to shop in the regions bordering the two main supermarkets. Though some traders confessed not to know if most of their customers were rich or middle-class, the location of the business was a better indicator. Apart from the two main supermarkets, traders likely to deal with rich customers were those situated in areas inhabited by the rich, for instance the *Laiser Hill* area dotted with mansions and spacious bungalows. Traders with stalls located in slum areas all confessed to having 'poor' clientele.

Most traders (67%) confessed to setting their prices independent of other traders, i.e. without any consultations whatsoever. Collusion was evident mainly in the market areas, where traders liaised with each other on what price to charge on a product. Though some did not consult with others on what price to charge, they confessed to setting prices analogous to their close neighbours due to the existence of fierce competition. Customers usually frequented the stalls of the cheapest trader across a spectrum of produce similar in size and quantity. There was an isolated case of traders with stalls located in the 'Ongata-Supermarket' vicinity forming a trade union to ensure uniformity in their operations. This was to guard against the habit of traders in their midst who would be inclined to lower

their prices in order to attract more customers at the risk of posting lower profits per unit of commodity, in order to capitalize on higher total sales. The union was very effective in that these traders (union members) were able to charge higher prices and earn higher profits relative to other traders.

Though there was evidently a great concentration of traders in the market regions, there existed a big proportion of traders dotted along the network of roads cutting across the entire area. An pilot-survey revealed that only about 40% of the traders were situated in a market area comprising of at least ten vendours per fifty metres.

Table3: Descriptive statistics of the explanatory variables

Variable	N	Mean	Maximum	Minimum	Standard deviation	Skewness	Kurtosis
location of business	126	.40	1	0	.49	.427	-1.847
collusion with other traders	126	.33	1	0	.47	.716	-1.512
prevalent weather	126	.50	1	0	.50	.000	-2.033
economic status of buyer	126	9.52E-02	1	0	.29	2.791	5.883
profit per day	126	393.4921	1600.00	30.00	393.6309	1.771	2.538
output from small scale farmers in region	126	.29	1	0	.45	.960	-1.096
Total cost per unit	126	2.2417	5.99	.27	1.3665	.717	-.149

Source: Authors computation

There is a marked difference in profit between the maximum of sh1600 and the minimum of sh30 mainly due to the clientele as well area where the business is located. For instance, the sh1600 profit was posted by a trader located in the Ongata-Supermarket area while the sh30 profit was posted by a trader in the *Kisumu-Ndого* slums. There is also a significant difference between the minimum and maximum value of total cost per unit.

The impact of weather has much to do with this for there exists two sets of costs depending on the season. The cost of Tomatoes and Onions is higher during the rainy seasons than it is during the dry spell. The prices are affected in like manner.

The table also gives the normality test results of the variables used in the study. Skewness characterizes the degree of asymmetry of a distribution around its mean with positive skewness indicating a distribution with an asymmetric tail extending towards more positive values and negative skewness indicating a distribution with an asymmetric tail extending towards negative values. Skewness should be within the range of -2 or +2 when the data are normally distributed. The results from the skewness show that except for the economic status of buyers, all the variables are normally distributed.

Kurtosis, on the other hand indicates the relative peakedness or flatness of a distribution compared with the normal distribution. Positive kurtosis indicates a relatively peaked distribution and negative kurtosis indicates a relatively flat distribution. Kurtosis should also be within the range of +2 or -2 when the data is normally distributed although a few authors use +3 or -3. Kurtosis statistics shows that most of the variables e.g. location of the business, collusion with other traders, prevalent weather, output from small scale farmers in region and Total cost per unit have a flat distribution while the variables economic status of buyers and profit per day are relatively peaked hence leptokurtotically distributed.

An isolated regression of weather on price reveals that changes in weather account for 12% of the variations in the prices of commodities. However, only the price of Onions and Tomatoes was significantly affected by this phenomena. This is because the presence

or absence of rainfall did not have any radical effect on the supply of Bananas as it did on Onions and Tomatoes. This is revealed in table 4.

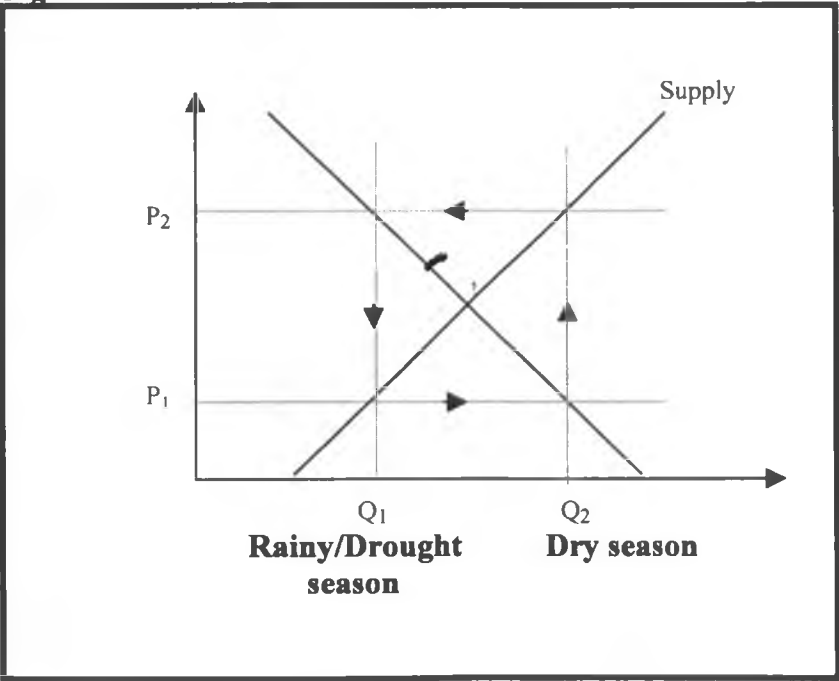
Table 4: Impact of weather on prices.

product	Frequency		Mean Price	Maximum price	Minimum price	Skewness	Kurtosis
Tomato	48	Dry weather	1.80	2.50	1.00	0.17	-1.52
		Rainy weather	2.74	3.30	2.00	0.04	-1.23
Onion	42	Dry weather	2.03	3.6	.60	0.19	-1.32
		Rainy weather	3.89	5.70	2.50	0.46	-1.45
Banana	36	Dry weather	4.28	5	2.50	-1.06	-0.07
		Rainy weather	4.06	5	2.50	-0.32	-2.02

Source: Authors computation

The price of Onions and Tomatoes takes on a trend akin to the cobweb model as Shown in figure 3 below;

Figure 3



There are basically two sets of prices P_1 and P_2 for these two commodities where P_2 represents the price traders charge during both rainy and drought seasons. Here, there is a low supply imposed by either lack of water to nourish the crops (during droughts, where rivers used for irrigation dry up) or too much water, which ruins the crops while still in the field (during the rainy season). At quantity Q_1 buyers are willing to pay sh P_2 hence this is the price at which the commodities retail at. At the onset of dry spells, the supply of Onions and Tomatoes increases to Q_2 . At this price, buyers are only willing to pay sh P_1 for the commodities. The produce therefore retails at this price since due to the perishable nature of the produce, the traders have no option but sell at this price.

Table 5: Frequency distribution of some demographic characteristics of the Traders

Demographic characteristics		Frequency	Percentage
Sex	Male	30	23.8
	Female	96	76.2
Highest level of Education	None	8	6.3
	Some primary school	49	38.9
	Completed primary school	36	28.6
	Some secondary school	29	23.0
	Completed form 4	4	3.2
	Completed form 6	0	0
	Completed College	0	0
	University education	0	0
Age in years	Below 20	4	3.2
	20-25	30	23.8
	26-30	22	17.5
	31-35	6	4.8
	36-40	30	23.8
	41-45	18	14.3
	46-50	12	9.5
	Above 50	4	3.2
Profit per day in Kshs.	Below 75	10	7.94
	75- 100	20	15.87
	101-500	70	55.56
	501-800	10	7.94
	801- 1200	8	6.35
	1201-1600	8	6.35

Source: Authors own computation.

Most of the traders interviewed (76.2%) were women with majority of the traders (70%) falling within the age bracket 20- 40. Very few of the traders attended secondary school many of them not even completing primary school education. Only a paltry 26% had at least some secondary education with only 3% having completed form 4.

4.2 Correlation Analysis

The correlation results show some degree of multicollinearity between the seven explanatory variables as shown in Table 6. This has the result of reducing the significance of independent variables.

In this study, correlation coefficient of ± 0.500 was taken to indicate a strong presence of multicollinearity. Looking at the correlation matrix, collusion with other traders is highly correlated with the location of business. This is because collusion in the setting of prices was only prevalent in the market centers. The economic status of buyers is highly correlated with the profit per day due to the fact that traders capitalized on the economic status of the more affluent buyers in the regions frequented by rich buyers to charge relatively higher prices which resulted in the realization of higher profits.

Table 6: the Correlation Matrix

	Location Of the Business	Collusion with other traders	Prevalent weather	Economic status of buyer	Output from small scale farmers in the region	Total cost per unit	Profit per day
Location of the Business	1.000	.528**	.000	.179*	-.043	-.063	.297**
	.000	.000	1.000	.045	.630	.484	.001
	126	126	126	126	126	126	126
Collusion with other traders	.528**	1.000	.000	.229**	.189*	-.097	.449**
	.000	.000	1.000	.010	.034	.279	.000
	126	126	126	126	126	126	126
Prevalent weather	.000	.000	1.000	.000	-.038	.473**	.011
	1.000	1.000	.000	1.000	.671	.000	.902
	126	126	126	126	126	126	126
Economic status of buyer	.179*	.229**	.000	1.000	-.173	.162	.502**
	.045	.010	1.000	.000	.052	.070	.000
	126	126	126	126	126	126	126
Output from small scale farmers in region	-.043	.189*	-.038	-.173	1.000	-.216*	-.203*
	.630	.034	.671	.052	.000	.015	.023
	126	126	126	126	126	126	126
Total cost per unit	-.063	-.097	.473**	.162	-.216*	1.000	-.037
	.484	.279	.000	.070	.015	.000	.678
	126	126	126	126	126	126	126
Profit per day	.297**	.449**	.011	.502**	-.203*	-.037	1.000
	.001	.000	.902	.000	.023	.678	.000
	126	126	126	126	126	126	126

Source: Authors own computation.

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

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

4.3 Regression Results

This section gives a report of estimation results of an OLS model of the factors influencing prices in the area of study.

4.3.1 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	76.6	58.6	56.2	.8607

The results show that 56% of the variations in the price level are explained by the following factors;

- Total cost per unit.
- Profit per day.
- Output from small scale farmers in region.
- Location of business.
- Prevalent weather.
- Economic status of buyer.
- Collusion with other traders.

This is reflected by the value of adjusted R^2 , shown above. The remaining 43% is captured by the error term.

4.3.2 ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	123.988	7	17.713	23.908	.000
	Residual	87.423	118	.741		
	Total	211.410	125			

F-test shows that the slope coefficients are jointly significantly different from zero thus F calculated is greater than the F critical, therefore the model is satisfactory. The significant levels are discussed below the OLS results.

4.3.3 OLS results

Model	Unstandardized B	Coefficient Std. Error	t-statistic	significance
Constant	2.377*	.211	11.269	.000
Total cost per unit	.434*	.068	6.374	.000
output from small scale farmers in region	-.682*	.221	-3.094	.002
location of business	-.713*	.192	-3.711	.000
collusion with other traders	-.453	.279	-1.624	.107
prevalent weather	.330***	.176	1.871	.064
economic status of buyer	.702**	.317	2.215	.029
profit per day	1.160E-04	.000	.353	.725
Dependent Variable: Price charged				

- ***Significant at 10%
- ** Significance at 5%,
- *significance at 1%

The coefficients of the following factors were statistically significant; location of business, prevalent weather, economic status of buyer, output from small scale farmers in region, and total cost per unit. All these variables have the expected sign.

Increasing the total costs incurred by the traders by one unit (shilling) will lead to an increase in price by .434 units (shillings).

Increasing the output of produce supplied to the market by small scale farmers in the region by 1% will lead to a fall in prices by .682%.

As movement from a non market area to a market area increases by 1%, this is likely to cause the price to fall by .71%.

A change in season from a dry season to a rainy spell is likely to cause an increase in price by .33 units.

As movement from an area frequented by middle class or poor buyers increases by 1% prices increase by .702%.

On the other hand, the coefficients of collusion with other traders and profit are not statistically significant nor do they have the expected sign.

This is because collusion is more prevalent in the market centres where prices are bound to be cheaper due to the presence of much competition. Hence rather than one charge higher prices and fail to sell most of the products, traders prefer to charge lower prices, attract more customers and hence clear their stock, the perishability of the commodities notwithstanding.

The profit on the other hand does not influence price but rather, prices influence profit. No single trader sets a specific target on the profits they hope to attain. Instead, the profit is determined by the prices. When the costs of commodities go up, the traders raise their prices but at lesser proportions to the increase in costs. Profits therefore reduce with increase in price.

CHAPTER FIVE: CONCLUSIONS AND POLICY IMPLICATIONS

This chapter presents the findings of the study and suggests some policy implication.

5.1 Conclusions

The key objective of the study was to determine the factors influencing the prices of non-seasonal agricultural produce in the urban markets with Ongata Rongai as the case study area. The study mainly used OLS method and descriptive statistics.

While one would expect that rainfall would cause a fall in prices due to an increase in supply, the opposite is true for the case of Onions and Tomatoes. The reasons are two fold. Since most of the produce (78%) is gotten from the rural areas, transportation becomes a problem due to the poor road network in the rural areas. Many of the roads leading to the farms become impassable hence produce has to be ferried manually to the main road, hence more time is consumed and less transported thus reducing the supply to the markets leading to increases in price. Another reason is that some produce especially Tomatoes, Onions and potatoes are susceptible to rainfall. They get destroyed by the water while still in the field which adversely affects the yield, leading to reduced supply and hence the increase in price.

The total output from small-scale farmers in the region was also a major determinant of price. Local farmers sold their produce directly to traders and the absence of middlemen as well as lower transactions costs made their products cheaper than those obtained from the rural areas.

5.2 Policy Recommendations

In light of the fact that weather affects pricing significantly and that hostile weather adversely affects agricultural produce both while in the farm as well as in the market place, there is need for policies aimed at facilitating a regular supply of non-seasonal agricultural produce from the farms to the market place as well as ensuring price stability across seasons. This is by way of Agricultural research aimed at developing water resistant varieties of crops to avert damage on the produce upon contact with water.

Establishing greenhouses (which has been used successfully in flower farming) in the rural areas so as to grow crops under controlled conditions especially for the case of Onions and Tomatoes, would also serve to streamline output production all the year round and hence ensure a steady and regular supply of produce to the market resulting in price stability. Agricultural extension officers should conduct seminars on the advantages of this technology while the government should make it more affordable to farmers by eliminating duty on materials used in constructing greenhouses as well as establishing loan schemes to facilitate acquisition of this equipment by rural farmers.

There is need for better infrastructure especially all weather roads in the rural areas so as to facilitate transportation of non-seasonal produce from rural farms all the year round and hence regularize supply and consequently prices. The government should invest in rural road transport infrastructure especially in areas prone to high rainfall.

The government should also issue licenses to the street traders and tax them just like other business owners so that they would be in a position to demand better services and

favourable investment terms just like other investors, which would woo more people into the sector. Licensing them and allocating them land would also enable them come up with better structures better capable of warding off the harmful effects of adverse weather conditions.

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APPENDIX 1

QUESTIONNAIRE

INTRODUCTION

I am a postgraduate Student at the University of Nairobi carrying out a research on the factors influencing the prices of non-seasonal agricultural produce in Ongata Rongai.

I am therefore requesting you to provide me with answers to the questions I intend to ask you on this subject to the best of your ability and knowledge. I wish to assure you that all information you give is purely for academic purposes and it will be treated with strict confidentiality. The findings from the research will serve as an instrument for directing policymakers on how best the government can intervene to help improve the living standards of informal sector traders.

Questionnaire No. _____

A. GENERAL INFORMATION

A1	Date and time of the interview	
A2	Area of interview	
A3	Name of Market	
A4	Premise	1= Isolated Vendor (1-10 persons per 50 metres) 2= Mini-market (10-20 persons per 50 metres) 3= Crowded market (over 20 vendors in a cluster)

B. PERSONNAL DATA

B1	Name of respondent	
B3	Sex	1= Male 2=Female
B4	Age in years	
B5	Marital Status	1 =Married 2=Widowed 3 =Divorced/Separated 4 =Single
B6	Number of dependants	
B7	How much formal education have you had?	0=None 1=Some primary school 2=Completed primary school 3=Some secondary school 4=Completed form 4 5=Completed form 6 6=Completed College 7=University education
B8	Do you live in your own house or do you rent a house?	0=live in own house 1=Rent
B9	If you rent, how much do you pay as rent in Kshs?	1=below 500 2=501-1000 3=1001-2000 4=2001-4000 5=Above 4000

C. INFORMATION ON PRODUCT

C1	Product Name	1=Onions 2=Tomatoes 3=Ripe Bananas
C2	Quantity of product under analysis	
C3	Name of other products sold	4=Mangoes 5=Avocadoes 6=Paw-paws 7=Kales 8=Green-Bananas 9=Water-melons 10=Carrots 11=Potatoes 12=Others (specify)
C4	Which is the most profitable product you sell?	
C5	Which commodity is bought the most?	

D. INFORMATION ON PRICE

D1	How much do you charge for your product?	
D2	Does this price ever vary?	1=rarely 2=occasionally 3= often 4=Never
D3	If yes, what causes these variations?	1=Perishability 2=Attract customers 3=Collusion with other traders 4=need for higher profits 5=change in costs 6=Others (specify)
D4	Do you ever charge different prices to different customers?	1=Yes 0=No
D5	If yes why?	
D6	Are there traders in the area who charge less than you do for the same product?	1=Yes 0=No
D7	If yes, why?	
D8	Are there traders in the area who charge more than you do for the same product?	1=Yes 0=No
D9	If yes, why?	
D10	Do you foresee a change of price in the near future?	1=Yes 0=No
D11	If yes, what do you think will cause this?	1=Arise in costs 2=Need for more profit 3=other (specify)
D12	Is your price affected by what other traders charge?	1=Yes 0=No
D13	Do you consult with other traders as you set the price?	1=Yes 0=No

D14	Generally speaking, how do you arrive at the price?	
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E: IMPACT OF WEATHER ON PRICES

E1	Does the weather affect the prices of you products?	1=Yes 0=No
E2	If yes, how much on average do you charge for a unit of your product during the rainy season?	
E3	At what price do you acquire it for?	
E4	How much on average do you charge for a unit of your product during the drought seasons?	
E5	At what price do you acquire it for?	

F: INTERACTION WITH COUNTY COUNCIL

F1	Do you have a license from the county council?	1=Yes 0=No
F2	If yes how much do you pay as license fee?	
F3	Do you ever get harassed by the county council?	1=Yes 0=No
F4	If yes, how often?	1=Occasionally 2=rarely 3=very often
F5	Do they ever confiscate your products?	1=Sometimes 2=never 3=always
F6	Do they ever demolish your stalls?	1=Sometimes 2=never 3=always 4=NA
F7	Have you ever been arrested by council Askaris while trading?	1=Yes 0=No
F8	Do you ever give them money?	1=Yes 0=No
F9	If yes, how much?	
F10	How often do the agents from the council visit in a year?	0=None 1=Once 2=twice 3=Occasionally(specify) 4=very often(specify)

G: BUSINESS INFORMATION

G1	How long have you been in this business?	
G2	Why did you start it?	
G3	Did you have a previous occupation?	1=Yes 0=No
G4	If yes, what was it?	
G5	Do you have plans to quit?	1=Yes 0=No
G6	If yes what do you plan to do next?	
G7	Does this business support you and/or your family or?	1=yes 0=No
G8	Do you have other sources of income?	1=yes 0=No
G9	What time do you usually open for business?	
G10	What time do you usually close?	
G11	Do you often close your business during the day?	1=yes 0=No
G12	If yes, what are the common reasons?	1=Council Askaris 2=lack of produce 3=Holidays 4=other (specify)

H: INFORMATION ON CUSTOMER

H1	Do you have regular customers?	1=yes 0=No
H2	Who are your major clients?	1=Regular customers 2=occasional customers 3=Total strangers
H3	How would you describe most of your customers?	1=rich 2=middle class 3=poor 4=Don't know

I: INFORMATION ON SUPPLIERS

I1	Where do you get the product from?	1=Other traders 2=local farmers 3=own farm 4=others (specify)
I2	How often do you re-stock?	
I3	Do you ever change suppliers?	1==yes 0=No 2=NA
I4	How often?	1=Occasionally 2=rarely 3=very often 4=NA
I5	Why is this?	1=Cheaper suppliers 2=unreliably suppliers 3=other (specify)

I6	Where do the suppliers get it from?	
I9	Are these the cheapest suppliers that you know of?	1==yes 0=No
I10	What is the major thing you look for in a supplier?	1==quality of produce 2=lowest cost 3=Both quality and low cost

J: INFORMATION ON INCOME PROFITS AND LOSSES.

J1	How much do you make per day on average in terms of sales volume in Kshs?	
J2	How much do you make per month on average in terms of sales volume in Kshs?	
J3	How much do you make per day on average in terms of profit?	
J4	How much do you make per month on average in terms of profits?	
J5	Do you set specific targets of the profits you hope to realize?	1=Yes 0=No
J6	Do you always realize these targets?	1=Sometimes 2=Rarely 3=Often
J7	Does the profit enable you to live comfortably where you can spend at least sh72 on basic needs each day?	1=Yes 0=No
J8	If not, how do you meet the shortfall?	
J9	Does some of your produce ever get spoilt?	1=Yes 0=No
J10	On average, give an estimate of your losses each month;	

K: INFORMATION ON COSTS

K1	At what price do you acquire the product for?	
K2	Do you incur any costs when transporting the produce from the suppliers?	1=Yes 0=No
K3	If yes, how much on average?	
K4	Do you incur other costs?	1=Yes 0=No
K5	If yes, give an estimate of the total costs	
K7	Have these costs changed from what they were in previous years?	1=significantly 2=Slightly 3=A great deal
K8	Explain;	

K9	Does a change in costs lead you to automatically adjust the prices?	1=Yes 0=No
K10	Explain;	

L: GENERAL INFORMATION

L1	What are the two major challenges/problems that you face in your business?	
L2	In your opinion, how can the government intervene to help you?	
L3	Other Comments	

M: EVALUATION QUESTIONS (FOR THE INTERVIEWER ONLY)

M1	Was the interviewer irritated or nervous during the interview?	1=Yes 0=No
M2	Do you think that the respondent made an effort to tell the truth?	1=Yes 0=No
M3	How do you rate the overall quality of the interview;	1=Good 2=fair 3=Poor.