# A COMPARATIVE ANALYSIS OF IMPORTED AND LOCAL FOOD AND AGRICULTURAL PRODUCTS COMPLIANCE TO KENYA QUALITY STANDARDS

**BY**

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# DECLARATION

This research project is my original work and has not been presented for the award of a degree at any other university.

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This research project has been submitted for examination with my approval as the university supervisor

Signed……..Date……

**DR. MARY KINOTI**

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To the almighty God for helping me up this step and to my supervisor Dr. Mary Kinoti for the extra classes she had to tutor me for this project with patience, encouragement and presence even during the busiest of times.

# DEDICATION

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# ABSTRACT

Kenya has a big agricultural potential, the continent of Africa as a whole has changed from being a net exporter to become a net importer of agricultural products and Kenya is not excluded. The persistence of this food-trade deficit has become a problem especially since Kenya does not have cash and the sources of foreign currencies, including agricultural export revenue, are used to pay for the rising food bills are limited. This problem is further compounded by the tendency of the Kenyans who have a high purchasing power to buy foreign food products instead of buying local products so as to spur local production. Some of the reasons cited for the preference for imported products is the "quality" tag. Imported products are "supposed" to be better than local ones. The main objective of the study was therefore to determine whether this perception is true as far as food and agricultural products coming into the Kenyan market are concerned. The benchmark for the quality compliance used was adherence to Kenyan standards as implemented by the Kenyan government through the Kenya Bureau of Standards. The research design adopted was a case study that involved interviews with experts and a comparison of local and imported products tested over a period of one year from June 2012 to May 2013. The study used an interview guide to collect the primary data while the secondary data was mined from the records of Kenya Bureau of Standards food and agriculture department. The study found that there was no significant difference in quality compliance of food and agricultural products from the local and import sources at $\alpha=0.05$. The study also found that both local and imported food and agricultural product met the criteria for quality compliance at $\alpha=0.05$. The study recommended that the reasons for difference in perception that imported food and agricultural products are of superior quality to local food and agricultural products should be further interrogated by dealing with individual food and agricultural products to determine which particular products tend to display this as opposed to the study's generalised model.

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# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Despite Africa's big agricultural potential, the continent has changed from being a net exporter to become a net importer of agricultural products in the 1980s (FAO, 2012). The persistence of this food-trade deficit has become a problem especially for countries that do not have cash or where the sources of foreign currencies, including agricultural export revenue, to pay for the rising food bills are limited. This problem is further compounded by the tendency of the Africans who have a high purchasing power to buy foreign food products instead of buying local products so as to spur local production.

Following liberalization, there have been some negative impacts especially with regard to imports of goods. Melamed (2005) argues that Import and export trends following liberalisation show that in all the countries for which it had data, the UN Conference on Trade and Development (UNCTAD) found that, following trade liberalisation, imports of food increased as a proportion of all imports, while imports of machinery declined, again as a proportion of all imports. The increase in cheap food imports priced farmers out of local markets. There are significant social, economic, and environmental benefits gained by purchasing local food products (Howe J, 2008). These include reduced packaging, reduced impact of transportation, reduced risk from agro-chemicals due to less intensive farm practices, increased bio-diversity of the region, and lower livestock densities. However, there is a perception in Kenya that imported food products are "better" than local food products hence the continued import of food products that are cheaply and readily available in Kenya. Mshenga and Owuor (2008) found that small and medium

enterprises have potential to be suppliers of the hotel food industry despite the fact that these hotels import a lot of food. Kenya has a large agro-processing industry, reflecting the importance of the agricultural sector in the Kenyan economy.

The majority of the pioneering industries during the colonial period were agro-based. A wide spectrum of agro-industries exists today, ranging from processing staple food and fruits, to beverage and tobacco production for both the domestic and foreign markets (Ikiara, 1995). There is no reason why these industries cannot produce enough quality food products to limit the numerous imports into the country. Ironically some of the food products produced in Kenya are exported mainly in the regional markets and even in Europe yet the country continues to import the same products into the local market.

**Table 1.1 Value of Kenya imports of Food and Beverages from Nov 2012-Mar 2013**

| Month | Value in Millions of Kshs. |
|---|---|
| November | 7589.70 |
| December | 7503.00 |
| January | 9,483.30 |
| February | 8111.40 |
| March | 7313.06 |

Source: Kenya National Bureau of Statistics

Clearly, there is a steady market for imported foodstuffs into the Kenyan market implying that there is a demand for these foods.

### 1.1.1 Imported product

Imports can be looked at from the perspective of international business. International business involves commercial activities that cross national frontiers. (Bennett 2011) It

concerns the international movement of goods, capital, services, employees and technology; importing and exporting; cross-border transactions in intellectual property, contract manufacture or assembly of goods abroad for local sale or for sale or export to other nations, and the import to one foreign country of goods from a second foreign country for subsequent local sale . An international transaction occurs because someone in one country has something that someone in another wants to buy. (Madeley, 1996). Hence to import in the context of this paper is to bring into the country a commodity that wholly originates from another country. The theory of comparative advantage (Ricardo 1817) states that output and the increase from specialisation and exchange "will be maximised when each country or region specialises in the production of those goods and services in which its comparative advantage is largest". The theory therefore implies that countries should only produce that which they are most efficient at producing and import the rest. Cavusgil *et al* (2008) defines importing as procurement of products or services from suppliers located abroad for consumption in the home country or a third company.

### 1.1.2 Local Product

A local product on the other hand is a product that is wholly made in the home country. This may be despite the fact that it is made by foreign technology as is the case with most processed food in Kenya. There are various reasons why importing of foods should be discouraged. Howe (2008) talks about the issue of "food miles" and how importing contributes to environmental degradation by increasing the carbon footprints of the food. This emphasizes not only the economic importance but also the environmental advantage of buying local products. Boyle (2008) says at the most basic level, when you buy local more money stays in the community.

The New Economics Foundation, an independent economic think tank based in London, compared what happens when people buy produce at a supermarket vs. a local farmer's market or community supported agriculture (CSA) program and found that twice the money stayed in the community when folks bought locally. "That means those purchases are twice as efficient in terms of keeping the local economy alive," Mishkin (2004) argues for buying local in that it enhances the "velocity" of money, or circulation speed, in the area. The idea is that if currency circulates more quickly, the money passes through more hands-and more people have the benefit of the money and what it has purchased for them. If one is buying local and not at a chain or branch store, chances are that store is not making a huge profit. That means more goes into input costs-supplies and upkeep, printing, advertising, paying employees-which puts that money right back in the community."

### 1.1.3 Quality Standards

The word quality has been defined in different ways by different writers. The early pioneers of quality like Juran (1979) defined quality as "fitness for use". Quality can also be defined as excellence; it means value and reliability. Oakland (1993) posits that reliability ranks with quality in importance since it is a key factor in many purchasing decisions where alternatives are being considered. He argues further that; many of the general management issues related to achieving product or service quality are also applicable to reliability. Meeting the customer requirements' definition of quality is not restrictive to the functional characteristics of products and services. Such other factors as 'satisfaction in ownership and 'status symbol' may also count in the purchase of some goods and services. This is where competition and maximum capacity building comes in.

Ability of any organization to predict and forecast the future of the market will be put to a total and maximum test here. Many an organization has eclipsed because of not taking this concept seriously or where they tried to anticipate a change in the market forces their prediction was not properly done. 'Quality' in this context does not have the popular meaning of 'best' in any absolute sense, but it means 'best' for certain specifications. Quality in this sense, in the case of a school organization will mean conformity with specifications; it is meeting and/or exceeding customer's expectation. The focus is on nothing less than optimum quality as is perceived by the customers (Ojo, 2003). Today, there is no single universal definition of quality. Some people view quality as "performance to standards." Others view it as "meeting the customer's needs" or "satisfying the customer."

A standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. (www.iso.org). In essence, a standard is an agreed way of doing something. It could be about making a product, managing a process, delivering a service or supplying materials – standards can cover a huge range of activities undertaken by organizations and used by their customers. Standards are the distilled wisdom of people with expertise in their subject matter and who know the needs of the organizations they represent – people such as manufacturers, sellers, buyers, customers, trade associations, users or regulators (www.bisgroup.com). The point of a standard is to provide a reliable basis for people to share the same expectations about a product or service. This helps to facilitate trade, provide a framework for achieving

economies, efficiencies and interoperability and enhance consumer protection and confidence.

Organizations might use a quality management standard to help them work more efficiently and reduce product failures; an environmental management standard to help reduce environmental impacts, reduce waste and be more sustainable; a health and safety standard to help reduce accidents in the workplace; a food safety standard to help prevent food from being contaminated; an interoperability standard to ensure that bank and credit cards fit into ATMs and can be used throughout the world.

### 1.1.4 Kenya Bureau of Standards

Kenya Bureau of Standards (KEBS) was established in July 1974 and operates under cap 496 of the laws of Kenya (www.kebs.org). The Kenya bureau of standards KEBS is mandated to develop and enforce the standards of industrial products in order to achieve production of goods and services that meet global demands. This enhances quality of Kenyan Products and improves access to both local and international markets. Kenya Bureau of standards deals with.

A Kenyan Standard is document established by consensus and approved by the Kenya Bureau of Standards (KEBS) that provides, for common and repeated use, rules, guidelines or characteristics for products and services and related processes or production methods, aimed at the achievement of the optimum degree of order in a given context. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method. Standards, therefore, help to make sure that products and services are fit for their purpose

and are comparable and compatible. Metrology department is mandated to realise, maintain and disseminate the SI units of measurements. It deals with issues especially in the industry to do with Mass, Pressure, Temperature, Density and Viscosity, Force, Volume and Flow and Dimensional Metrology. Quality assurance deals with ensuring that products manufactured, or imported and sold in the Kenyan market meet the requirements of the Kenyan standards.

The primary function of the testing services department of KEBS is to provide tests in areas of chemistry, food, microbiology, material engineering and textiles. The test services are offered to both internal and external customers. It provides testing services to a wide range of clientele that include, but are not limited to: Manufacturers, Exporters, Non-governmental Organizations, Government Departments, Research institutions, Merchants and KEBS Quality Inspectors who implement Kenya Standards. The tests on products are carried out against national standards, International standards, specific Government and other client specifications. (www.kebs.org)

## 1.2 Research Problem

There is a large consumption of foreign or imported products in the Kenyan market with imports of food and beverages being over Kshs. 7 billion per month (Kenya National Bureau of Statistics, 2012). There is a perception that foreign products are of good quality and this is one of the reasons for the high demand for these products. However Kenyan manufacturers argue that their products are of similar high quality and meet not only Kenyan but international standards and hence they expect Kenyans to be buying more local products. From an economic point, it is important that Kenyans buy local products

to not only boost the economy but also reduce the amount of foreign currency going out and to prevent the collapse of local industry and loss of jobs (Melamed, 2005).

When trade is liberalized, imports climb steeply as new products flood in. Local producers face stiff competition in terms of price and quality of goods from the imported products (Melamed, 2005). Exports also tend to grow, but not by as much. Demand for the kind of things Kenya needs - such as raw materials - doesn't change much, so there isn't a lot of scope for increasing exports. Overall local producers are selling less. In the long run, it's production that keeps a country going - and if trade liberalization means reduced production, in the end it will mean lower incomes. Any gains to consumers in the short term from consuming imports will be wiped out in the long term as their incomes fall and unemployment rises. This means that it is crucial for the local manufactures to device ways and means of competing with imported and this means matching the imported products both in terms of efficient production leading to lower costs and affordable pricing to adhering to high standards to produce quality goods.

There have been several studies conducted on local versus imported products. Watson and Wright (1999) Investigates the relationship between consumer ethnocentrism and consumer attitudes toward foreign manufactured products in product categories in which domestic alternatives are not available. Ghemawat (2001) argues that imported products are constantly displacing local products but a lower rate than is perceived. Nijssen *et al* (1999) argue that both consumer ethnocentrism and feelings of animosity result in reluctance to purchase certain imports products. Product evaluation is, however, mediated by perceived availability of domestic alternatives and travel to other countries. Opoku *et al*(2009) suggest that country of origin is more important than price and other product

attributes, the Ghanaian consumer holds the 'Made in Ghana' label in low regard relative to foreign labels, whilst superior quality and consumer taste are the 2 most important reasons for the Ghanaian consumers' preference for foreign products. Opoku *et al* (2009) Mitgwe *et al* (2008) and Saffu *et al* (2006) have also examined the impact of country-of -origin effects and consumer attitudes towards buy local campaign initiatives. Basically, the attitudes of consumers in these studies to the buy locally-made campaigns can be characterized as protectionist, nationalistic, and self-interest. In assessing the hiring preferences among organisations in one developing country, Carr *et al*. (2001) find that East Africans but not western expatriates tend to be less preferred than fellow Tanzanians. To the best of this researcher's knowledge, no work has been done on the comparison of quality attributes between local and imported food products into Kenya.

## 1.3 Objectives of the study

1) The objectives of this study will be to determine whether local food and agricultural products meet the quality requirements as set out in the Kenyan standards

2) To determine whether imported products meet the requirements set out in the Kenyan standards.

3) To establish whether there is any significant difference in the quality performance between imported and local food and agriculture products when measured against Kenyan standards.

## 1.4 Value of the study

This study will be of value to consumers because if it turns out that there is no significant difference in the quality of local products when compared with imported products then they can be confident in purchasing local products which are not only cheaper but also help to boost the local economy. Secondly the study will be useful to the government in its efforts to improve local production because local products that are as good as imported products can also be exported to foreign countries to generate income and foreign currency to improve the balance of trade payments for the country as a whole. The study will also help local manufacturers to understand the quality status of their international competitors and hence position their products to be able to compete better in the free market environment.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

Fundamentally international trade is a much narrow set of activities and consists of exports and imports (e.g. goods and services) only. International business is a much broader concept and includes international trade, direct foreign production or any other activity across countries conducted by an entity in managing and carrying out its operations.

## 2.2 Theoretical foundation of the study

The theory of comparative advantage differences between nations are explained by exogenous differences in national characteristics. Labor differs in its productivity internationally and different goods have different labour requirements, so comparative labour productivity advantage (Ricardo, 1817) is a predictor of trade patterns. Ricardian trade theory is simple and even rather loosely confirmed by empirical evidence. The factor proportions theory added relative factor endowment differences to the exogenous explanation of comparative advantage (Jones, 1987). More capital abundant countries have higher labour productivity, but the advantage gained relative to the less abundant countries varies with the relative capital intensity of the good's technology. Combining technology and endowment differences appears to account well for actual trade patterns (Davis and Weinstein, 2002).

Trade theory also encompasses endogenous differences between countries. One focus is on economies of scale. The wider market due to trade induces a cost advantage in an

industry in one of the countries. Another theory is based on monopolistic competition, whereby the wider markets due to trade increase product variety as buyers seek the special characteristics of foreign brands. Differentiated products trade flows both ways within product categories. Trade costs also shape the pattern of trade. The economic theory of gravity explains the complex bilateral trade patterns among countries. Actual trade is much lower than gravity predicts in a frictionless world, providing evidence of trade costs much larger than those due to policy or transportation. The costs are well explained by geography and a set of national differences. The stability of the relationships over time suggests that these costs change slowly. There are gains from trade in all these models. But the division of the gains will be uneven and there will be losers. Distribution matters in two ways, between and within nations. Internationally, with only mild qualifications, gains are shared between nations: some trade is better than none. Each nation can act through trade policy to take more of the gain, however, leading to destructive trade wars with mutual losses. Within national economies, there are gains on average but there are ordinarily losers. National institutions act to redistribute some of the gains (U.S. Trade Adjustment Assistance) or provide temporary relief from losses due to trade (escape clause protection), at the cost of lowering the overall gain from trade (Levin, 2013).

The economic theory of gravity complements the preceding models by providing an explanation of bilateral trade (Anderson and van Wincoop, 2004). Gravity fits the data well and reveals important information. The model is based on four assumptions: expenditure on goods from all sources is equal to income from sales to all sources, markets for all goods clear, and, more restrictively, each country or region produces a

unique good and all countries have the same tastes for goods. The third assumption, products differentiated by place of origin, appears to be the most restrictive. In practice, only models of this type do at all well in fitting bilateral trade patterns. Monopolistic competition provides one explanation for why products appear to be differentiated by place of origin. Eaton and Kortum (2002) show alternatively that productivity shocks in a Ricardian model will select producers within product lines, resulting at the aggregate level in what appears to be two way trade. In either case, gravity ends up describing trade flows. In a frictionless world, gravity theory predicts that the bilateral trade in a commodity as a share of world production of the commodity will be equal to the product of the source country's share of world production of the commodity times the consuming country's share of expenditure on the commodity. Alternatively, the model predicts that size-adjusted-trade; the bilateral flow divided by the product of source country supply and consuming country expenditure, should be constant across country pairs in a frictionless world.

## 2.3 International Business

International transactions today actually take place between private individuals and private enterprises based in different countries. Governments sometimes sell things to each other, or to individuals or corporations in other countries, but these comprise only a small percentage of world trade. Trade is not a modern invention. International trade today is not qualitatively different from the exchange of goods and services that people have been conducting for thousands of years. Before the widespread adoption of currency, people exchanged goods and some services through bartering—trading a certain quantity of one good or service for another good or service with the same

estimated value. With the emergence of money, the exchange of goods and services became more efficient. Developments in transportation and communication revolutionized economic exchange, not only increasing its volume but also widening its geographical range. As trade expanded in geographic scope, diversity, and quantity, the channels of trade also became more complex. The earliest transactions were conducted by individuals in face-to-face encounters. Many domestic transactions, and some international ones, still follow that pattern (Levin, 2013).

The producers and the buyers of goods and services became more remote from each other overtime. A wide variety of market actors, individuals and firms emerged to play supportive roles in commercial transactions. These “middlemen” such as wholesalers, providers of transportation services, providers of market information, and others facilitate transactions that would be too complex, distant, time-consuming, or large for individuals to conduct face-to-face in an efficient manner. International trade today differs from economic exchange conducted centuries ago in its speed, volume, geographic reach, complexity, and diversity. However, it has been going on for centuries, but its fundamental character in the exchange of goods and services for other goods and services or for money–remains unchanged (Levin, 2013)

## 2.4 Imported and Exported Products

Since the beginning of the industrial era almost three centuries ago, countries exported goods and services because of a number of reasons among them; individuals and firms have been able to produce more goods and services than can be consumed at home. This prompted a search for foreign opportunities to sell the “excess” production. Individuals and firms have been able to sell goods or services to other countries at prices higher than

the prices they can obtain domestically. Countries import at least some goods and services for the several reasons such as goods or services that are either essential to economic well-being or highly attractive to consumers but are not available in the domestic market. Goods or services that satisfy domestic needs or wants can be produced more inexpensively or efficiently by other countries, and therefore sold at lower prices (Levin, 2013).

Exporting and importing serves somewhat different purposes for developing and industrial countries. Although the economies of developing countries are typically not as productive as the economies of industrial countries, developing countries nonetheless produce some goods and services in amounts they are unable to use or consume at home. This is called a production surplus. For example, some developing countries produce vast quantities of agricultural products, like cocoa in Cote d'Ivoire and coffee in Latin America, which their own populations are not large enough to consume. Other developing countries produce quantities of industrially valuable minerals, like oil or iron ore, that their own economies are too small or not yet industrialized enough to use. For many developing countries, exports also serve the purpose of earning foreign currency with which they can buy essential imports—foreign products that they are not able to manufacture, mine, or grow at home. Developing countries, in other words, sell exports, in part, so that they can import. Exporting goods and services can also further advance developing nations' domestic economies. Interconnectivity through global trade can be problematic, though. For example, up until 2008, Japan had a booming export business with the United States. When American consumers became unable to buy Japanese products, Japanese companies lost a large portion of their consumer base (Ryuhei W,

2009). Industrial countries tend to export a much wider variety of products than do developing countries as well as export a larger proportion of their total production of goods and services. Export sales help maintain high employment levels for many industrial countries.

## 2.5 Review of local Production

Local products are those products that are wholly or partially manufactured and sold in the country of origin. Local production especially of food has several advantages. It creates jobs, boosts the economy and improves the standard of living. Buying local also means getting fresh produce. There are many reasons that a government might want its own companies to make products rather than have to buy from abroad, including: unreliable suppliers; questionable quality (from other developing country producers); avoidable costs (i.e. transportation costs) and difficulties involved in forecasting demand when pre ordering supplies (Kaplan et al 2005).

In theory, local production seems like an attractive solution to many of these problems. Secondary, more industrial, reasons for a developing country wanting to promote local production might also include the desire to create a new employment base, increase transfers of technology and knowledge, enter a new export market, cut dependency on foreign suppliers, and better manage otherwise negative foreign exchange flows. Though local production can have industrial benefits for developing countries, the extent to which it can provide increased access to products varies considerably from country to country. For local production to be successful and competitive it requires a constant supply of inputs, as well as constant energy, clean water, skilled expertise, and advanced technology.

## 2.6 Quality standards

Quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for. Customers pay only for what is of use to them and gives them value. Nothing else constitutes quality (Drucker, 1985). Now days, the customers are the ones who define what is quality for them based on their needs and preferences. So quality is the perception that the customer has of the product or service based upon that person's evaluation of his/her entire experience. That perception will influence the customer willingness to pay and use the same product or service one more time and tell everybody about it through worth of mouth. A quality product is not the same as expensive product; because low priced products can be considered as having high quality if the customers determine them as such (Calfa, 2011). Therefore good standards try to capture the essence of product quality as it is perceived by customers.

### 2.6.1 Factors influencing Quality Perception

There are a number of factors that influence customers perception on the product quality namely country of origin, price, perceived risk among others. Whether purchasing local or imported products, consumers base their purchase decisions on a several factors. Consumers use both intrinsic and extrinsic informational product cues as the basis for their evaluation of products (Ulgado & Lee, 1998). Intrinsic cues involve the physical composition of a product, whereas extrinsic cues are product related, but are not part of the physical product itself. Brand name, retailer reputation, and products' country of origin are regarded as extrinsic cues and can be manipulated without physically changing the products (Verlegh & Steenkamp, 1999).

Research has shown that country of origin serves as a signal for product quality and performance. Erickson, Johansson and Chao (1984) developed a model that involves country of origin and other product attributes such as quality and performance. They found a “halo effect” of country of origin: that is, country image affects beliefs about tangible product attributes, and in turn affects overall evaluation. Also, Han (1989) found that when unfamiliar with a country's product, consumers infer product information into country image, which then influences consumers’ attitudes toward other attributes.

While most studies in this area have treated country of origin as a multidimensional construct that evokes various product-attribute-related responses, some studies have shown that country of origin is not merely a cognitive cue. Instead it can be an affective image attribute which has direct influence on consumers' decision making. Hong and Wyer (1989) demonstrated that the effect of country of origin cannot be explained entirely by the quality signaling process. They found that country of origin also has symbolic and emotional meaning to consumers, and it plays an important role like other attributes such as quality and reliability in shaping consumers' attitudes toward products. Affective connotation of country of origin may be formed not only by direct experience in foreign countries or encounters with foreigners, but also through indirect experience with countries through culture, education or some well-known events. In a realistic consumption environment, not only country-of-origin image itself, but also the interaction between the image and other informational cues play important roles in consumers' purchase behaviors. In addition, consumers' perceptions of specific product attributes will vary across products, brand names, and purchase place, and consumers of different nationality and socio-economic status will hold different perceptions of the

same attribute. Without being involved in such a consumption environment, an investigation of how country-of-origin image affects consumers' quality perceptions would be difficult. Since the focus in this research is the investigation of consumers' preferences for a particular product attribute, this research examined the effect of products' country of origin on consumers' purchase intentions by treating this attribute as an affective aspect of a product. In addition, researchers have discovered that consumers in developed countries tend to prefer products from developed countries, first and foremost from their own countries. However, consumers in less-developed countries view domestic products less favourably than products from more advanced countries (Granzin & Olsen, 1998; Jaffe & Carlos,1995; Okechuku & Onyemah, 1999; Papadopoulos, Louise & Jozsef, 1990).

Consumers should use a product's price to determine if the product is affordable. However, consumers also appear to use a product's price as a measure of the product's quality. Many empirical studies (Monroe 1973) and (Olson 1977) have shown that when consumers have some uncertainty concerning a product's quality, the consumer often assumes that a higher product price indicates a higher level of quality. Some authors Gabor et al (1966) Tull et al (1964) suggest these studies imply that the traditional economic treatment of price and consumer behaviour are wrong.

In studying consumer behavior, we might wonder why consumers consistently use price as a surrogate measure of quality. One explanation might be the objective reality of the price-quality relationship. However, some authors Friedmand (1967), Sproles (1977), Riesz (1979) have found few positive relationships between product quality ratings given by consumer union publications and the actual brand prices. In fact. negative correlations

were often found. It would appear that there is no objective motivation underlying the prevalent consumer perception of a positive price-quality relationship. This situation is made even more perplexing by other recent findings. Allison-Uhl (1964) found that most consumers could not discern the taste differences among various beer brands yet when Schlitz (Business Week, 1982) lowered the quality of their beer, Schlitz sales dramatically declined. Perhaps, consumer behavior and the price-quality relationship are more complex in a real market than laboratory research suggests

Several studies reinforce this conclusion. Monroe (1977) suggests the importance of the context in which the relationship occurs. The market, of course, creates the context for the relationship. Geistfeld (1982) notes that real quality and price in a market are both complex concepts because the evaluation of quality varies from publication to publication and the price of a brand varies from outlet to outlet. Wilde et al (1979) show that a few consumers can have a dramatic effect on prices in the market.

### 2.6.2 Quality standards compliance

Food quality and safety are the totality of characteristics of the food products that bear on their ability to satisfy all legal, customer and consumer requirements (Will and Guenther, 2007). It is noteworthy that food safety is not synonymous with food quality, although there might be an overlap. Quality includes all product attributes that influence its value to consumers, whereas safety includes all measures intended to protect human health (Nelson,2005. Lasztity, Petro-Turza and Foldes 2007). The definitions of the terms “Food hygiene”, “Food Quality Control”, “Food Safety” and “Food Standards” used in this article have been adopted from Lasztity *et al.* (2007).Absolute safety is an unattainable goal for any food. However, food is considered to be safe if there is reasonable

demonstrated certainty that no harm will result from its consumption under anticipated conditions of use (WHO, 2000). The national food safety and quality system in Kenya is managed by various statutory government agencies under different ministries. They aim at promoting public health, and protecting the consumers against health hazards, and enhancing economic development (Oloo, 2007).

### 2.6.3 Benefits of Quality Standards Compliance

International Standards bring technological, economic and societal benefits. They help to harmonize technical specifications of products and services making industry more efficient and breaking down barriers to international trade. Conformity to International Standards helps reassure consumers that products are safe, efficient and good for the environment. International Standards are strategic tools and guidelines to help companies tackle some of the most demanding challenges of modern business. They ensure that business operations are as efficient as possible, increase productivity and help companies access new markets.

International Standards help optimise operations and therefore improve the bottom line hence saving costs. They help to improve quality, enhance customer satisfaction and increase sales. They also help prevent trade barriers and open up global markets. They enhance productivity and competitive advantage. International Standards help reduce negative impacts on the environment. When products and services conform to International Standards consumers can have confidence that they are safe, reliable and of good quality.(www.iso.org)

# CHAPTER THREE: RESEARCH METHODOLOGY

## 3.1 Introduction

This chapter focuses on the research methodology that was for the purposes of this research. It includes the research design, data collection and how the data was analysed.

## 3.2 Research Design

The research design was a case study and which covered a comparison of local and imported products tested over a period of one year from June 2012 to May 2013. This design was to ensure an in depth interrogation of the performance of the two classes of products. This design was chosen because of the single unit of study that is the Kenya Bureau of Standards. The case study design was thus able to provide a holistic and comprehensive assessment with emphasis placed on the evaluation of the imported and local product for quality compliance.

## 3.3 Data Collection Methods

Primary data and secondary data was collected for the purpose of the study. The data was collected using an interview guide. The interview guide comprised mainly of open ended questions. Secondary data concerning the actual performance of local and imported products was mined from the records of the Kenya bureau of standards testing department. This data covered the period of June 2012 to May 2013. The data was quantitative in nature and included levels of compliance, number of products failing to meet standards and the countries of origin most prone to quality failure as well as local products and their levels of compliance. Primary data was collected from the 2 managers

in charge of quality standards compliance at the Kenya bureau of standards namely the import export manager and the quality assurance manager or the equivalent.

## 3.4 Data Analysis

The primary data was analysed using content analysis due to the qualitative nature of the data while the secondary was summarised using excel spread sheet and analysed using two way Analysis of variance for local and imported products.

# CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND INTERPRETATION

## 4. 1 Introduction

This chapter covers the research findings and the data analysis. The data has been summarised and presented in the form of tables, charts and graphs. The collected data has been analysed and interpreted in line with the aim of the study. SPSS package was used to analyse the secondary data which was of quantitative nature.

## 4.2 General Information of the respondents

The respondents interviewed were the chief manager of research and development at the Kenya Bureau of Standards while the second manager was a quality assurance and inspection officer of the same organisation. Their education levels were doctorate and master's degrees respectively. The chief manager had worked in the organisation for over 15years while the quality assurance manager had over 12 years' experience.

## 4.3 Quality Standards and Standards Compliance

The respondents had similar views on what standards are and on their importance on the facilitation of trade and consumer safety. They agreed that Quality Standards are statements outlining the key elements of a quality programme.

### 4.3.1 Meaning of quality standards and their origin

KEBS is guided by the ISO definition of quality and quality standards which states that "a standard is a document that provides requirements, specifications, guidelines or

characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose". The respondents also agreed that standard making in Kenya is driven by the industry as well as the government and external markets especially where goods are for export. The majority of standards are also adopted from the international organisations for example the world health organisation (WHO), the food and agriculture organisation (FAO) and the international electrotechnical commission (IEC). These are specialist organisations that are world leaders in quality standards touching on health , food and electrical equipment respectively. The standard making process in Kenya involves getting together as many stakeholders in a particular industry as possible and with KEBS acting as a secretariat having meetings that eventually form standards. These standards are then passed on to the national standards council the NSC which liaises with the ministry of industry which when in agreement forwards the standards to parliament to be made into laws. Once passed into law the standards are legally binding. Following the formation of the EAC, there has been a move towards the integration of the standards of the member states of the EAC. To this end east African standards have been developed and these supersede the individual member states standards.

### 4.3.2 Standard compliance in KEBS

The Kenya bureau of standards quality assurance and inspection and market surveillance divisions are the divisions charged with ensuring compliance with standards both within Kenya. The quality assurance and inspection division deal with goods entering the country at the points of entry for example at border points and airports. They also ensure that products manufactured in Kenya by Kenyan manufacturers also meet the quality

standards prescribed. This they do by visiting local manufacturers and picking samples of the produced goods and taking them to KEBS laboratories for testing to ensure they meet the Kenyan standards or the east African standard as the case may be. In situations where Kenyan standards do not exist for a given product, international standards(ISO) may be used to determine the quality compliance of a given product. All food and agricultural products are supposed to be tested for quality standards compliance. By law all food and agricultural products entering the Kenyan market are supposed to comply with the relevant products. The Kenya bureau of standards has a very important role of ensuring that food and agricultural products meet Kenyan standards. They are charged with enforcing the standards. Therefore they are responsible in ensuring that products meet the set standards for consumer benefits.

## 4.4 Imported Products

### 4.4.1 Commonly imported food and agricultural methods

According to KEBS, the following are the types of food and agricultural products that are imported into the country and their major countries of origin.

**Table 4.1 List of products and their countries of origin**

| PRODUCT | COUNTRIES OF ORIGIN |
|---|---|
| Rice | Pakistan and India |
| Sugar | Egypt and Comesa countries |
| Honey | Australia |
| Confectionery | North Africa and middle East |
| Maize | Comesa region |
| Canned beef | Brazil |

The respondents contend that most of these products coming into the country have direct equivalents that are of similar quality. The managers contend that imported products are not really superior to local products and in some cases fair much worse than local products.

### 4.4.2 Imported products standard compliance challenges

Table 4.2 indicates the imported products and the problems associated with them as far as Kenyan standards are concerned.

**Table 4.2 Imported Products Standard Compliance Challenges**

| PRODUCT | COMPLIANCE CHALLENGE |
|---|---|
| Rice | Low grades |
| Sugar | Impurities |
| Honey | Generally compliant |
| Confectionery | Generally Compliant |
| Maize | Poor grades |
| Canned beef | Generally compliant |

As can be seen from table 4.2, imported Beef, Honey and confectionery are seen to be generally compliant to Kenya standards while some imported rice usually tends to be very low grade rice that is either broken or dirty, similarly sugar has the problem of having solid impurities while Maize that is imported tends to be shrivelled and discoloured and sometime it is contaminated by afflatoxin. Although they did not have concrete data to back it up, the respondents were of the opinion that imported processed food performed much better in terms of quality to the local processed foods while foreign unprocessed foods like cereals performed poorly than local products. They also pointed

out that this was very much dependent on the country of origin with imports of cereals form African countries being of comparatively lower quality than that from the local market.

## 4.5 Local Products

The respondents felt that local cereals products performed much better than imported cereal products. They cited the case of local cereals like Pishori rice which is such a high grade that it is subject to illegal blending with foreign varieties especially Pakistan rice because of its good cooking quality and aroma. Other products of high quality that undergoes blending include the Kenyan tea which is usually blended with Brazilian tea, albeit legally. Local products also have the challenge it terms of quality and the managers cited the case of local honey which used to enjoy a lot of consumption and even export until issues of adulteration began. This adulteration is in form of mixing with water and addition of cane sugar. This saw Kenyan honey stopped from export to the EU market. Local maize has also been subject to a lot of quality issues especially in terms of afflatoxin poisoning due to poor post-harvest handling especially of storage**.**

## 4.6 A comparison between local and imported food and agricultural products

One respondent felt that the local products are just as good as imported products and face the same challenges as imported products. He felt that the perception that imported products are superior is false. However his compatriot pointed out that local producers sometimes tend to compromise on the quality of their products due to the weak checks in place and ignorant consumers. He felt that consumers who had knowledge about quality

were the ones who purchased most of the imported products. He also said that due to the price sensitivity of the local market occasioned by low purchasing power, consumers are much more likely to compromise on quality as opposed to more affluent consumers in developed countries where some of these products come from.

## 4.7 Secondary Data Analysis

This focuses on the secondary data that was collected in order to find out whether there is any supporting evidence to the interview from the managers.

### 4.7.1 Imported Products

Table 4.3 shows the total percentage imported product performance over the period of the study.

**Table 4.3: Percentage of Imported product passes and failures from July 2012 to June 2013**

| **Product** | **% Passes** | **% Failures** |
|---|---|---|
| Rice | 88.5 | 11.5 |
| Honey | 100 | 0 |
| Tea | 100 | 0 |
| Coffee | 100 | 0 |
| Confectionery | 99.5 | 4.5 |
| Sugar | 95.8 | 4.2 |
| Maize | 86.7 | 13.3 |
| Salt and Spices | 88.2 | 11.8 |
| Milk and Milk Products | 91.9 | 8.1 |
| Canned Fruits | 100 | 0 |
| Mean | 95.06 | 5.34 |

For the period between July 2012 and June 2013, imported products show marginal failure rates the highest being 15% of the imports for that particular month. This can be attributed to the volume of imports for that particular month. Some months do not record a single failure for imported products.

### 4.7.2 Local Products

Table 4.4 shows the total percentage local product performance over the period of the study

**Table 4.4: Percentage of Local product passes and failures from July 2012 to June 2013**

| **Product** | **% Passes** | **% Failures** |
|---|---|---|
| Rice | 85.1 | 14.9 |
| Honey | 81.8 | 18.2 |
| Tea | 100 | 0 |
| Coffee | 100 | 0 |
| Confectionery | 81.4 | 18.6 |
| Sugar | 93.5 | 6.5 |
| Maize | 83.6 | 16.4 |
| Salt and Spices | 88 | 12 |
| Milk and Milk Products | 85 | 15 |
| Canned fruits | 100 | 0 |
| Mean | 89.84 | 10.16 |

Local products on the other hand show steady failures throughout the year in question although the highest percentage failure is 15% in the month of February. There is no single month that no failure was recorded.

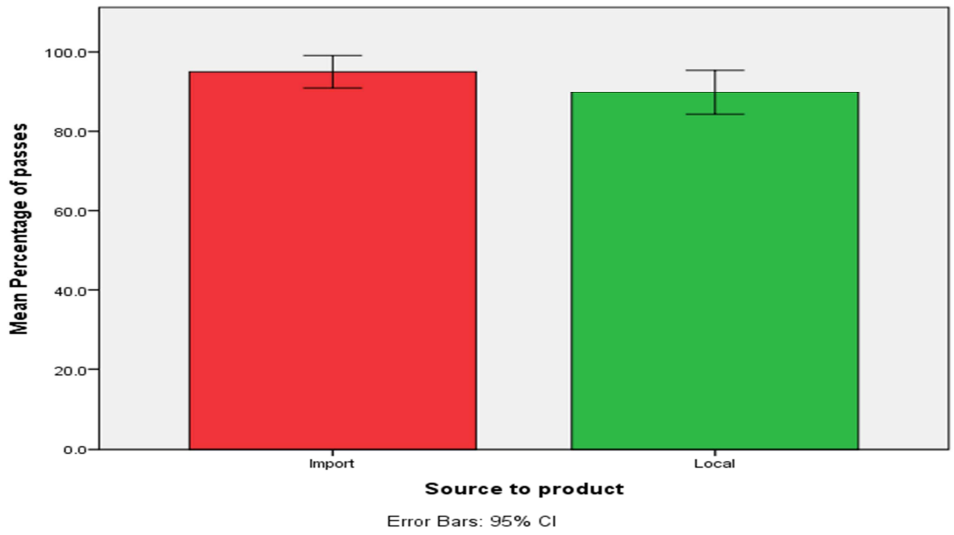


**Figure 4.1: Quality Passes for Import and Local Products**

The bar chart in figure 4.1 shows compares the performance of imported and local products to each other. The chart does not show a significant difference and even the error bars are within the limits at 95% confidence interval.

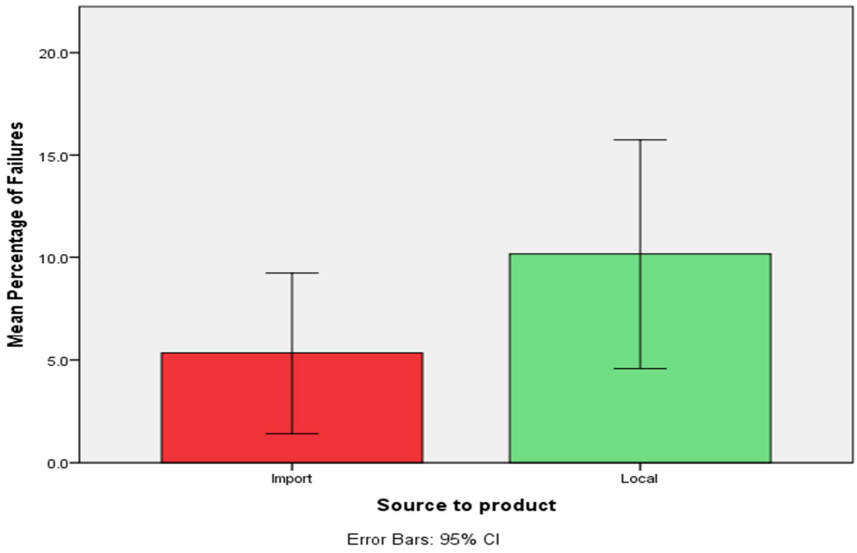


**Figure 4.2: Quality Failures for Import and Local Products**

Figure 4.2 on the other hand focuses on the failures of both imported and local products. Clearly local product failure percentage mean is higher ( 10.16 to 5.34) than that of imported products but at 95% confidence interval the error bars indicate that the means still lie within the ranges of each other hence are not significantly different at that confidence interval.

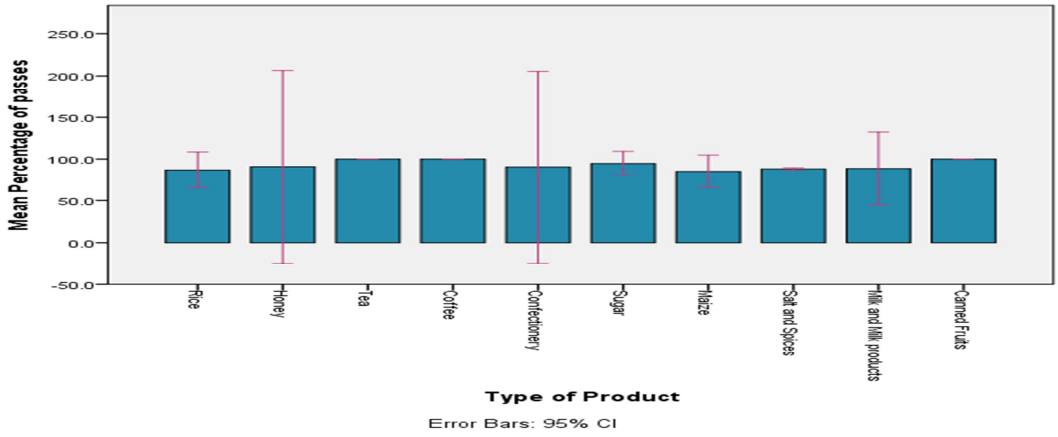


**Figure 4.3 Product percentage passes for both local and imports over one year**

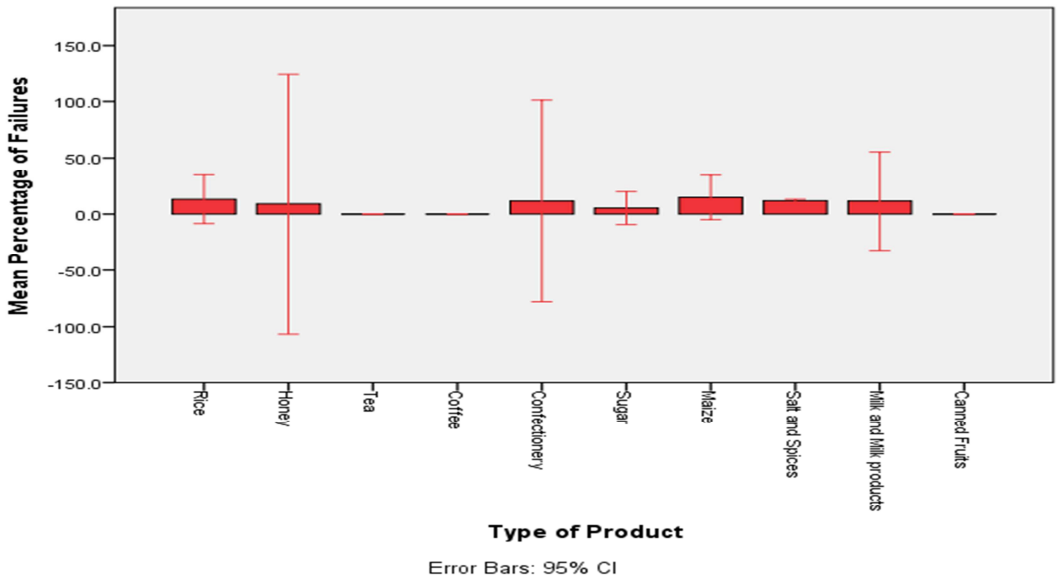


**Figure 4.4 Product percentage failures for both local and imports over one year**

### 4.7.3 Analysis of variance for passes

The analysis of variance for complying products was done to finally confirm if it is indeed true that there doesn't seem to be a statistically significant difference in both quality compliance and quality failures for both local and imported goods. The data for the Anova is given in table 4.5

**Table 4.5: Import versus Local products complying with standards**

| **Month** | **% Passes Import** | **% Passes Local** |
|---|---|---|
| Rice | 88.5 | 85.1 |
| Honey | 100 | 81.8 |
| Tea | 100 | 100 |
| Coffee | 100 | 100 |
| Confectionery | 99.5 | 81.4 |
| Sugar | 95.8 | 93.5 |
| Maize | 86.7 | 83.6 |
| Salt and Spices | 88.2 | 88 |
| Milk and Milk Products | 91.9 | 85 |
| Canned Fruits | 100 | 100 |

**Table 4.6: Analysis of variance for product passes for Local and Imports**

| Anova: Single Factor | | | | | | |
|---|---|---|---|---|---|---|
| SUMMARY | | | | | | |
| *Groups* | *Count* | *Sum* | *Average* | *Variance* | | |
| %Import Passes | 10 | 950.6 | 95.06 | 31.98267 | | |
| % Local Passes | 10 | 898.4 | 89.84 | 60.796 | | |
| ANOVA | | | | | | |
| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
| Between Groups | 136.242 | 1 | 136.242 | **2.936925** | 0.103744 | **4.413873** |
| Within Groups | 835.008 | 18 | 46.38933 | | | |
| Total | 971.25 | 19 | | | | |

The analysis of variance confirms what was evident from the bar charts that there is significant difference as to the quality compliance of imported and local food and agricultural products. The *F* ratio **2.936925** is smaller than the *F crit* value **4.413873**. Neither local nor Imported food and agricultural products are any different from each other as far as quality compliance is concerned. In other words the two sets of data being compared are not statistically different and no product complies better than the other.

## 4.7.4 Analysis of variance for failures

The analysis of variance for non-complying products was done to finally confirm if it is indeed true that there doesn't seem to be a statistically significant difference in quality failures for both local and imported goods. The data for the Anova is given in table 4.6

**Table 4.7: Import versus Local products not complying with standards**

| **Month** | **Failure Import** | **Failure Local** |
|---|---|---|
| Rice | 11.5 | 14.9 |
| Honey | 0 | 18.2 |
| Tea | 0 | 0 |
| Coffee | 0 | 0 |
| Confectionery | 4.5 | 18.6 |
| Sugar | 4.2 | 6.5 |
| Maize | 13.3 | 16.4 |
| Salt and Spices | 11.8 | 12 |
| Milk and Milk Products | 8.1 | 15 |
| Canned Fruits | 0 | 0 |

**Table 4.8: Analysis of variance for product Failures for Local and Imports**

| Anova: Single Factor | | | | | | |
|---|---|---|---|---|---|---|
| SUMMARY | | | | | | |
| *Groups* | *Count* | *Sum* | *Average* | *Variance* | | |
| %Import Failures | 10 | 53.4 | 5.34 | 29.636 | | |
| % Local Failures | 10 | 101.6 | 10.16 | 60.796 | | |
| ANOVA | | | | | | |
| *Source of Variation* | *SS* | *df* | *MS* | *F* | *P-value* | *F crit* |
| Between Groups | 116.162 | 1 | 116.162 | **2.569046** | 0.126376 | **4.413873** |
| Within Groups | 813.888 | 18 | 45.216 | | | |
| Total | 930.05 | 19 | | | | |

The analysis of variance confirms what was indicated from the bar charts that there is significant difference as to the non-quality compliance of imported and local food and agricultural products. The *F* ratio **2.569046**is smaller than the *F crit* value **4.413873**. Neither local nor Imported food and agricultural products are any different from each other as far as quality failures are concerned. In other words the two sets of data being compared are not statistically different and no product fails better or worse than the other.

# CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSION AND RECOMMENDATION

## 5.1 Introduction

This chapter provides the summary of the findings from chapter four; it also gives the conclusions and recommendations of the study based on the objective of the study. The objectives of this study were to determine whether local food and agricultural products meet the quality requirements as set out in the Kenyan standards. The second objective was to determine whether imported products meet the requirements set out in the Kenyan standards. The final objective was to establish whether there is any significant difference in the quality performance between imported and local food and agriculture products when measured against Kenyan standards.

## 5.2 Summary of the Findings

The study found that there was a slight difference in the opinion of the interviewees as to the quality compliance of both local and imported food and agricultural products. One interviewee felt that locally manufactured food products are just as good as imported food and agricultural products while the second interviewee felt that local products tended not to be as good as imported products. The interviewees also felt that local agricultural products especially cereals tended to be of higher quality than imported cereals while imported processed foods tended to be better than local processed foods.

The secondary data analysed showed that there was no significant difference in the percentage of samples of food and agricultural products that met the quality requirements from both the local and imported sources at $\alpha=0.05$. The study also found that of the

products that failed to meet the quality requirements from both local and imported sources there was no significant difference among them at $\alpha=0.05$. The study found that to a large extent both local and imported food and agricultural products met the quality requirements as set out in the Kenyan standards and there was no significant difference between them.

## 5.3 Conclusions

This study concludes that local food and agricultural products meet the quality requirements set at in the Kenyan standard with 95% level of confidence. The study also concludes that different classes of local products have their own unique quality compliance challenges with some performing better than others for example local cereals. However even within the local cereal industry there is a variance in that some regions may not produce quality products.

The study also finds that with 95% confidence imported food and agricultural products meet the quality requirements set out in the Kenyan standards. However there are certain of these products that may not meet the high threshold but their numbers are insignificant as far as the study is concerned.

The study also concludes that at $\alpha=0.05$, there is no significant difference in the quality compliance of food and agricultural products from the local and import sources. Both the products that pass quality requirements from local sources do not differ from those that pass quality requirements from imported sources and those that fail to meet quality requirements from local sources do not differ significantly from those that fail to meet quality requirement and are from imported sources. Therefore the conclusion is that local

products meet the quality requirements set out in the Kenyan standards just as good as imported products.

## 5.4 Limitations of the Study

The study was carried out by interviewing 2 experienced managers at Kenya Bureau of standards and data mining results of analysis carried out in accordance to Kenyan standards over a period of one year between July 2012 and June 2013. The researcher feels that this number is very small and may have been better if expanded. It also emerged during the research that there was multi-layer of food and agricultural products each with differing characteristics and this should have been dealt about one product at a time for example local honey data versus imported honey data. This factors were thus limiting.

## 5.5 Recommendations for policy and theory

From the findings and conclusions it appears that there is a no significant difference in quality compliance for food and agricultural products from the local and imported sources. Therefore further scrutiny of other available data should be carried out for previous data and for new emerging data to find out whether this is a trend or just an occurrence for the period under study. Because of the large volumes of data involved a team of researchers is recommended to be able to cover more areas thoroughly. It is also recommended that a study should be done on individual food and agricultural products from local and import sources to find out which particular one differ in quality.

## 5.6 Recommendations for further Research

Further study should be carried out one product at a time in order to come out with individual performance and not the generalised view of the present research. Another study should be carried out concurrently based on consumer preferences and perceptions about local and imported food and agricultural products.

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# APPENDICES

## APPENDIX 1: QUESTIONAIRE COVER LETTER

CHARLES MANNARA
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TEL 0722-777172
mcmannara@gmail.com
5/9/2013

Dear Sir/Madam

**Re: Data Collection For MBA Research Project**

My name is Charles Mannara, a post graduate student undertaking a Master of Business Administration (MBA) degree at the School Of Business, University Of Nairobi. As a partial fulfilment of the requirement for the award of the MBA degree, I am currently conducting a study on "**A Comparative Analysis Of Imported And Local Products Quality Standards Compliance: A Case Study Of Selected Food And Agricultural Products Inspected By The Kenya Bureau Of Standards**."

I kindly request for your valuable time in assisting to complete the attached questionnaire and to conduct data mining on the selected local and imported products including but not limited to.

1. Honey
2. Tea
3. Coffee
4. Biscuits
5. Sugar
6. Maize

7. Rice
8. Salt
9. Milk
10. Tomato paste.

The findings of this study will be important in understanding the reasons why foreign products still are popular in Kenya from quality and standards compliance perspective. The information provided in the questionnaire will be treated with utmost confidentiality and will not be used for any other purpose apart from its intended academic use.

Thank you.

Yours faithfully.

Charles Mannara.

# APPENDIX 2: INTERVIEW GUIDE

This guide is meant to collect information on the quality of imported versus local products. The respondents will be required to respond to the following questions.

**Section A: Respondents Profile**.

1. Position Held.
2. Number of Years of Service.
3. Level of Education.

**Section B: Quality Compliance**

1. What are quality standards?
2. How are quality standards formulated in Kenya?
3. How are quality standards compliance enforced in Kenya?
4. What influence does Kenya bureau of standards have on quality standards compliance of imported food and agricultural products?

**Section C: Overview of Imported Food and Agriculture Products Coming into Kenya.**

1. Please describe generally the nature of food and agriculture products coming into Kenya?
2. From which countries do these products come from?
3. Generally what are the monthly volumes and frequencies of these products?
4. From your experience how do imported products generally perform?
5. Are there country differences in quality compliance for the different products?

**Section D: Overview of Local Food and Agriculture Products.**

1. Briefly describe the quality compliance characteristics of local products?
2. In your opinion, how do local products fare alongside imported products in quality compliance?
3. Are there differences in quality compliance from local products from different regions in the country?

**Section E: Comparison of Local Versus Imported Products**.

1. What would you say is the relative performance of local and imported food and agricultural products comparatively?
2. In your opinion is the quality compliance levels between the two sources of food and agricultural products enough to justify continued imports?
3. What else do you have to say on this study?

# APPENDIX 3: RAW DATA FOR IMPORTED AND LOCAL PRODUCTS FROM JULY 2012 T0 JUNE 2013

| **Product** | **Import** | | | **Local** | | |
|---|---|---|---|---|---|---|
| Month/Status | Pass | Fail | Total | Pass | Fail | Total |
| July | 24 | 2 | 26 | 122 | 23 | 145 |
| August | 31 | 1 | 32 | 122 | 11 | 133 |
| September | 23 | 1 | 24 | 97 | 16 | 113 |
| October | 27 | - | 27 | 114 | 12 | 126 |
| November | 34 | 2 | 36 | 99 | 13 | 112 |
| December | 39 | 6 | 45 | 87 | 11 | 98 |
| January | 38 | 4 | 42 | 150 | 17 | 167 |
| February | 23 | - | 23 | 114 | 21 | 135 |
| March | 19 | 2 | 21 | 103 | 14 | 117 |
| April | 25 | - | 25 | 112 | 17 | 129 |
| May | 26 | - | 26 | 126 | 12 | 138 |
| June | 22 | 1 | 23 | 137 | 18 | 155 |
| Total | 331 | 19 | 350 | 1383 | 185 | 1568 |

## APPENDIX 4: PRODUCT DATA, IMPORT PASSES.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Product Month** | **RICE** | **HONEY** | **TEA** | **COFFE** | **CONF** | **SUGAR** | **MAIZ** | **SALT AND SPICES** | **MIL K AND PRODU** | **CANNE D FRUITS** |
| July | 5 | 3 | 1 | - | 8 | 3 | - | - | 4 | 1 |
| August | 4 | - | 4 | 5 | 6 | 1 | - | 2 | 5 | 4 |
| September | 4 | - | 3 | 4 | 5 | 2 | - | - | 2 | 3 |
| October | 4 | - | 5 | 3 | 6 | 1 | 3 | - | 3 | 2 |
| November | 6 | 2 | 2 | 4 | 9 | 2 | 1 | 1 | 4 | 3 |
| December | 8 | 5 | 3 | 3 | 10 | 2 | - | - | 4 | 4 |
| January | 8 | - | 5 | 3 | 9 | 3 | 3 | 3 | 2 | 2 |
| February | 4 | - | 3 | 2 | 6 | 1 | 1 | 1 | 3 | 2 |
| March | 2 | - | 2 | 3 | 5 | 3 | - | 1 | 2 | 1 |
| April | 4 | 3 | 2 | - | 7 | 2 | 3 | 2 | 1 | 1 |
| May | 3 | - | 2 | 2 | 8 | 3 | - | 3 | 2 | 3 |
| June | 2 | 1 | 3 | 3 | 6 | - | 2 | 2 | 2 | 1 |
| Total | 54 | 14 | 35 | 32 | 85 | 23 | 13 | 15 | 34 | 27 |

## APPENDIX 5: PRODUCT DATA, IMPORT FAILURES

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Product Month** | **RICE** | **HONEY** | **TEA** | **COFFE** | **CONF** | **SUGAR** | **MAIZ** | **SALT AND SPICES** | **MILK AND PRODUC** | **CANNED FRUITS** |
| July | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| August | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| September | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| October | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| November | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 |
| December | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 |
| January | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 |
| February | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| March | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| April | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| June | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Total | 7 | 0 | 0 | 0 | 4 | 1 | 2 | 2 | 3 | 0 |

## APPENDIX 6: PRODUCT DATA, LOCAL PASSES

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Product Month** | **RICE** | **HONEY** | **TEA** | **COFFEE** | **CONFECTIONERY** | **SUGAR** | **MAIZE** | **SALT AND SPICES** | **MILK AND PRODUCTS** | **CANNED FRUITS** |
| July | 18 | 10 | 11 | 12 | 14 | 12 | 10 | 8 | 13 | 14 |
| August | 21 | 7 | 12 | 5 | 8 | 20 | 19 | 9 | 16 | 5 |
| September | 15 | 8 | 8 | 4 | 9 | 11 | 23 | 5 | 11 | 3 |
| October | 19 | 8 | 12 | 8 | 11 | 13 | 21 | 7 | 9 | 6 |
| November | 15 | 9 | 7 | 6 | 7 | 14 | 19 | 8 | 7 | 7 |
| December | 18 | 4 | 6 | 5 | 6 | 14 | 17 | 3 | 8 | 6 |
| January | 26 | 14 | 15 | 10 | 18 | 18 | 24 | 8 | 11 | 8 |
| February | 17 | 9 | 12 | 10 | 11 | 12 | 16 | 9 | 12 | 6 |
| March | 16 | 8 | 11 | 9 | 9 | 11 | 15 | 8 | 11 | 5 |
| April | 17 | 13 | 12 | 10 | 11 | 11 | 16 | 7 | 9 | 6 |
| May | 19 | 16 | 16 | 12 | 9 | 8 | 21 | 7 | 11 | 7 |
| June | 22 | 15 | 14 | 6 | 14 | 13 | 24 | 9 | 12 | 8 |
| Total | 223 | 121 | 136 | 97 | 127 | 157 | 225 | 88 | 130 | 81 |

## APPENDIX 7: PRODUCT DATA, LOCAL FAILURES

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Product Month** | **RICE** | **HONEY** | **TEA** | **COFFE** | **CONFEN TIONERY** | **SUGAR** | **MAIZ** | **SALT AND SPICES** | **MILK AND PRODUC** | **CANNED FRUITS** |
| July | 6 | 2 | 0 | 0 | 3 | 1 | 8 | 1 | 2 | 0 |
| August | 2 | 1 | 0 | 0 | 1 | 0 | 4 | 0 | 3 | 0 |
| September | 2 | 1 | 0 | 0 | 4 | 0 | 5 | 2 | 2 | 0 |
| October | 3 | 2 | 0 | 0 | 2 | 0 | 4 | 0 | 1 | 0 |
| November | 2 | 2 | 0 | 0 | 3 | 1 | 2 | 0 | 3 | 0 |
| December | 4 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 1 | 0 |
| January | 5 | 3 | 0 | 0 | 3 | 0 | 4 | 1 | 1 | 0 |
| February | 4 | 6 | 0 | 0 | 3 | 2 | 3 | 1 | 2 | 0 |
| March | 3 | 2 | 0 | 0 | 2 | 1 | 3 | 2 | 1 | 0 |
| April | 2 | 4 | 0 | 0 | 3 | 2 | 1 | 2 | 3 | 0 |
| May | 3 | 1 | 0 | 0 | 1 | 1 | 4 | 1 | 1 | 0 |
| June | 3 | 2 | 0 | 0 | 3 | 2 | 3 | 2 | 3 | 0 |
| Total | 39 | 27 | 0 | 0 | 29 | 11 | 44 | 12 | 23 | 0 |

`