THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Factors Affecting the Performance of Locally Owned Coffee Washing Stations in Rwanda: Evidence from Rusizi District

Emmanuel Rusatira
Student, Department of Business Administration, School of Human Resource Development,
Jomo Kenyatta University of Agriculture and Technology, Kigali Campus, Kenya
Mbabazi Mbabazize
Lecturer, Department of Agricultural Science, School of Agriculture and Applied Economics,
Jomo Kenyatta University of Agriculture and Technology, Kigali Campus, Kenya
Jaya Shukla
Lecturer, Department of Agricultural Science, School of Agriculture and Applied Economics,
Jomo Kenyatta University of Agriculture and Technology, Kigali Campus, Kenya

Abstract:
This study was carried out to determine the factors affecting the performance of locally owned coffee washing stations in Rwanda taking a case study of Rusizi District because the Rwanda's coffee production has remained highly cyclical and average levels have not risen since 2002 and this trend continues to be experienced. Locally owned Coffee washing stations in Rwanda have been seen to operate below their production capacity with a significant number failing to pay back their operating capital. Therefore, there is need to closely examine the factors that affect the performance of locally owned coffee washing stations in Rusizi District so as to plan and improve performance thus this study. The researcher used descriptive method of study based on qualitative and quantitative approach in order to get analysis of the study. Researcher used both primary and secondary data collection tools with their relevant tools like questionnaire and documentary analysis in order to come up with required data.
In the findings the researcher established that various factors affecting performance of performance of locally owned washing stations and this include; population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors. The above factors affect profitability, productivity, quality of coffee, efficiency, competiveness and growth and expansion of the washing stations. The table 4.12 gave the relationship between factors affecting performance of locally owned washing stations and Performance of washing stations whereby the respondents N is 96 and the significant level is 0.01, the results indicate that independent variable has positive high correlation to dependent variable equal to .975** and the p-value is .000 which is less than 0.01. When p-value is less than significant level, therefore researchers conclude that variables are correlated and null hypothesis is rejected and remains with alternative hypothesis. This means that there is a significant relationship between various factors and the performance of locally owned washing stations in Rwanda.

Keywords: Coffee Washing Stations and Perfomance

1. Introduction

1.1. Background of the Study
Coffee is a popular beverage and an important commodity, and tens of millions of small producers in developing countries make their living growing coffee. Over 2.25 billion cups of coffee are consumed in the world every day (Bates, 1997). Over 90% of coffee production takes place in developing countries, while consumption happens mainly in the industrialized economies.
Worldwide, 25 million small producers rely on coffee for a living. For instance, in Brazil alone, where almost a third of all the world's coffee is produced, over 5 million people are employed in the cultivation and harvesting of over 3 billion coffee plants, it is a much more labour-intensive culture than alternative cultures of the same regions as sugar can or cattle, as it is not subject to automation and

requires constant attention (Akiyama &Varangis, 1990). Coffee is a major export commodity: it was the top agricultural export for twelve countries in 2004, the world's seventh-largest legal agricultural export by value in 2005, and "the second most valuable commodity exported by developing countries," from 1970 to 2000.

Coffee producers in Africa accounted for about 12% of global supply and less than 11% of global exports of the product for the 2009/10 season. These contributions to the global coffee market are almost equal to Indonesia's, the third largest world producer of the commodity.

Notwithstanding the small contribution of African countries to the global coffee market, the commodity constitutes a large proportion of both GDP and exports share in some of the continent's small economies. For example, in Ethiopia and Rwanda, coffee exports generated about 26% and 22%, respectively, in export revenue in 2009 (IC0, 2004).

Particularly notable, coffee production is predominantly produced by small scale farmers who contribute more than 95% of total production in Ethiopia. Therefore, global coffee market conditions have important implications for growth and poverty reduction in the country. Given the importance of coffee in some of Africa's economies, this brief assesses the recent developments in the global coffee market. It also draws some conclusions on the implications of such developments on coffee producing countries in Africa

Coffee in Rwanda remains one of the most important crops. It is mainly grown by small holder farmers and an approximate number of 500,000 have been estimated to grow it on a total area of 33,000 ha (hectare). National coffee production between the years 2000 and 2004 harvested between 16,000 and 25,000 tons and a hectare was estimated to yield an average of 2 tons (OCIR-Café, 2005). Rwanda mainly produces Arabica coffee that is sought after in global coffee markets. Coffee in Rwanda is handpicked, sun dried and processed in the coffee washing stations. Some of the washing stations are owned by co-operatives, companies as well as individuals. In Rwanda, the performance of locally owned coffee washing stations (CWSs) have been greatly affected by various factors and this study will be carried out in order to examine the factors affecting the performance of locally owned coffee washing stations in Rwanda using the case study of Rusizi district.

1.2. Statement of the Problem

Despite the fact that Rwanda produces the most exquisite Arabica Bourbon coffee, highly sought after in specialty coffee markets world over, since 1992, production and quality of coffee have been adversely affected due to many factors (USAID, 2009). Production is currently approximately at 15,000 tons, down from 35,000 tons in 1992 (National Coffee Census, June 1999). Furthermore, world market prices for ordinary coffee have been low since early 1990 due to the suspension of coffee quotas by the international coffee organization (ICO) resulting in a world glut. As a result, farmers are not motivated to maintain their plantations.

Rwanda's coffee production has remained highly cyclical and average levels have not risen since 2002 and this trend continues to be experienced. Locally owned Coffee washing stations in Rwanda have been seen to operate below their production capacity with a significant number failing to pay back their operating capital. Therefore, there is need to closely examine the factors that affect the performance of locally owned coffee washing stations in Rusizi District so as to plan and improve performance thus this study.

1.3. Objectives of the Study

1.3.1. General Objectives
The general objective of the study was to examine the factors affecting the performance of locally owned coffee washing stations in Rusizi district, Rwanda.

1.3.2. Specific Objectives
   i.   To identify the factors affecting performance of selected locally owned coffee washing stations in Rusize District
  ii.   To examine the performance indicators of selected locally owned coffee washing stations in Rusize District
 iii.   To examine the impact of different factors on performance of selected locally owned coffee washing stations in Rusize District

1.4. Research Questions
   i.   What are the factors affecting performance of selected locally owned coffee washing stations in Rusize District?
  ii.   How are the performance indicators of selected locally owned coffee washing stations in Rusize District?
 iii.   What is the impact of factors on performance of selected locally owned coffee washing stations in Rusize District?

2. Review of Related Literature

2.1. Introduction
Under this chapter the researcher brings out a critical review of the issues that have been explored and studied both theoretically and empirically on the existing literature on the factors affecting the performance of coffee washing stations in developing countries and elsewhere in the world and this was done in line with the specific objectives of the study in order to identify the knowledgeable gaps. It is important to note that the greatest part of the existing literature on the works of other scholars, opinions, suggestions who have written about the topic of the study or those who have addressed similar issues as those of the variable was available in the study.

2.2. Theoretical Review

The study was based on the systems theory which is a Trans disciplinary study of the abstract organisation phenomena, independent of their subsistence, type, partial or temporal scale of existence and considers a system as a set of independent and interacting parts. This theory was first used by L.von Bertalanffy a biologist as the basis for the field of study known as General Systems Theory a multi-disciplinary field (Bertalanffy, 1968).

This theory investigates both principles common to all complex entities, and the (usually mathematical) models which can be used to describe them. The other related fields of systems theory are information theory which helps in understanding a wide variety of physical, social and behavioural process including communication.

The systems approach is important to CWS in accomplishing their mission of processing quality coffee while increasing productivity and profitability. In this aspect, the systems theory helps in identifying the key issues under the successful implementation of CWS as dependent variable that is productivity, quality, efficiency, effectiveness and competiveness. In the implementation of CWS socio-economic, institutional, political and weather and climatic dimensions of the community and nation have an impact on whether or not CWS thrive since the participation of the various stakeholders are affected by the context in which CWS is implemented. To provide appropriate programming for CWS and get support of stakeholders the total context within which CWS is implemented must be taken into account with a recognition that systemic changes may be required if CWS goals are to be achieved over a long-term (Myers, 1994).

Experience has demonstrated that programs like CWS should be implemented in response to the context that is socio-economic, institutional, political and weather and climatic rather than adjusting the context to a pre-determined model, there continues to be a strong tendency to transfer and impose models from one setting to another without adequate attention to whether or not the model is the best choice of the setting and the study attempts to examine the same.

In the implementation of CWS the stakeholders include government both (central and local), farmers, the community, agricultural officers and politicians who are independent but interact in the execution of their varying roles and responsibilities in CWS implementation as asserted by the systems theory but all these should be done in response to the existing context that is the interest of the study, and that will affect the performance of CWS positively or negatively.

In order to be successful in CWS implementation roles and responsibilities for each stakeholder must be fulfilled for instance central government provides the political leadership, vision, mission and stability, farmers grow and harvest good quality coffee, agricultural officers provide technical support to the farmers and CWS's, financial institutions provide credit services, and the community provides the moral and labour for the CWS's to operate. In the context of the systems theory and the study all the stakeholders should meet their obligations in response to the prevailing socio-economic, institutional, political weather and climatic dimensions in order to ensure successful implementation of the CWS's.

On the other hand the systems theory propagates that CWS success requires high expectations and purposeful support within the caring environment. A caring environment in the context of this study focuses on institutional dimensions factor which envisages provision of infrastructure in terms of feeder roads, buildings, machinery, accommodation for workers, latrines, water and other materials which constitutes a friendly work environment. Again a caring environment requires that all the stakeholders in the CWS are on board, therefore the systems theory is relevant for the study in the identification of the variables in question.

The systems theory also propagates the ideals of the socio-economic dimension factor of land shortages resulting from population growth, fluctuating coffee prices which strengthens the position of diversionary farming enterprises that draw farmers away from coffee growing. It should be clear that no one entity can claim to go it alone but a multiple stakeholder involvement thus success rests on all.

Further still a system perspective of CWS can identify supports and barriers to successful implementation of CWS project. CWS projects require putting in place procedures and mechanisms to ensure sustainability and successful implementation. For instance under the institutional dimension factor of staffing, CWS's require technically skilled personnel with relevant experience to be able to implement the project.

According to Techno serve (2013) to achieve maximum impact from coffee; all areas of the value chain must be addressed. Improving coffee processing methods and creating market linkages is not enough; it is also necessary to focus on increasing production at the farm level and address cross-cutting issues like access to finance.

A successful coffee value chain has the sufficient agronomic expertise to achieve consistently high yields, adequate wet-milling capacity and expertise for operating the wet mills efficiently, access to finance both for working capital and capital investments at reasonable rates and marketing services to dry mill and export the coffee. Techno Serve (2013), this is in agreement with the systems approach which advocates for proper linkages with the subsystems.

It is important to note that these different components of the systems approach could be barriers to successful implementation of CWS. For instance the government may over tax the locally owned CWS's, yet the coffee prices in the international market may not cover the operating costs including the high taxes thus collapse of CWSs. This system theory therefore will help in identifying such dimensions as institutional, social economic, political and climatic or weather related that affect the performance of locally owned coffee washing stations.
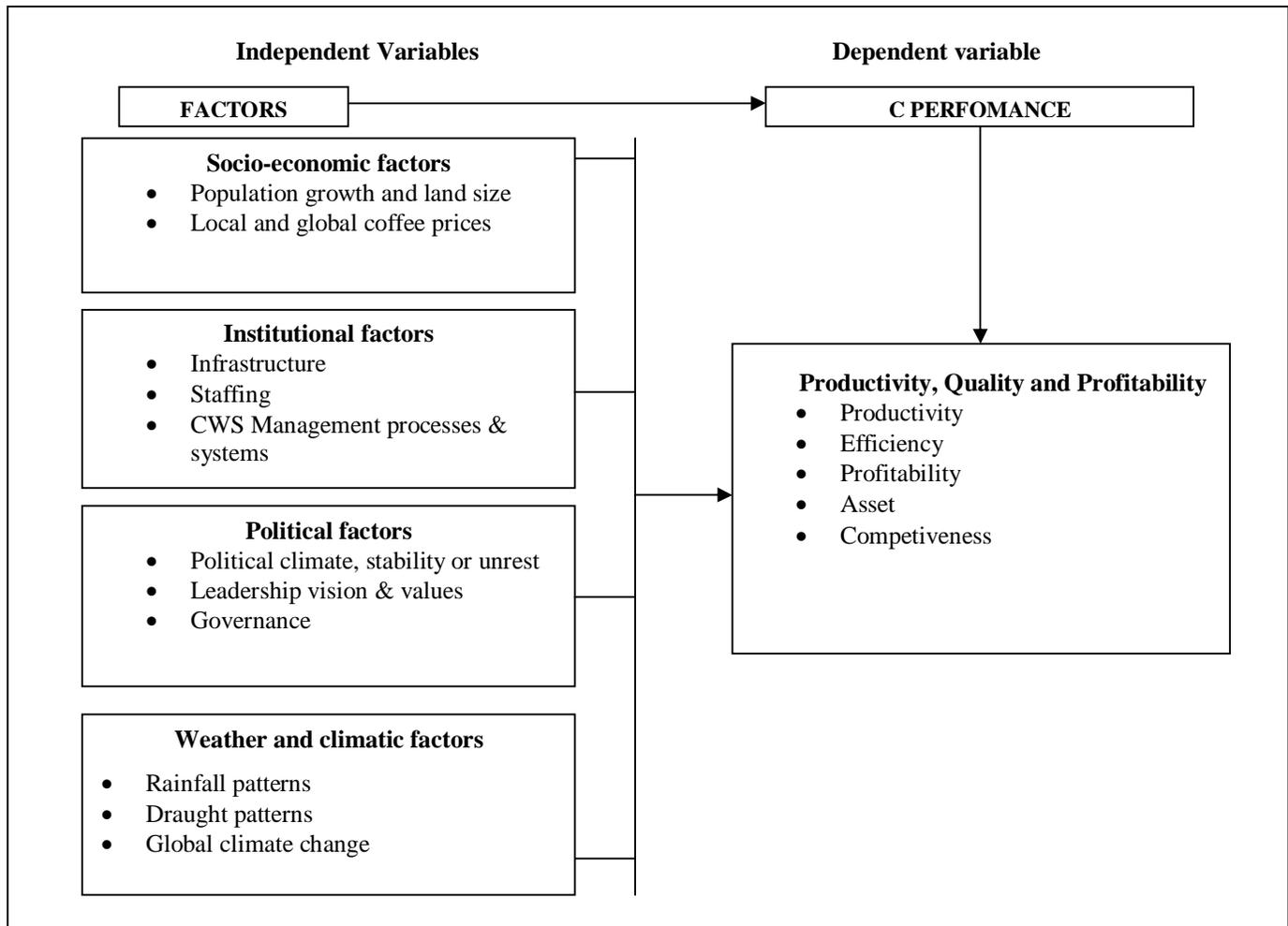
2.1.1. Conceptual Framework

Figure 1
Source: Researchers conceptualisation, 2015

2.2. Review of the Related Literature

2.2.1. Factors Affecting Performance of Coffee Washing Stations
The performance of coffee washing stations is affected by many factors as seen below:

a. Socio-Economic Factors
Coffee washing stations operate within the context of their community and country, general socio-economic trends affect coffee washing stations by making it easier or hander for farmers to raise coffee and enable coffee washing stations to receive adequate raw materials or not. The nature of land use, choice of farming enterprise and global and local coffee prices has a direct effect on the development of CWSs and their sustainability. Coffee requires large pieces of land and is a permanent crop that will not shift any time soon. Population growth reduces available land for cultivation, reducing coffee prices frustrates farmers and shifts their attention to other farming enterprises that command better prices in the market (Amin M.E,2005).

b. Institutional Factors
Successful implementation of coffee washing stations requires national and local capabilities in terms of appropriate training, materials administrative and supervisory support to the people providing the services. This capacity may be existing or not, so it's important to conduct an in-depth investigation to assess the existing institutional strengths and gaps in what CWSs are able to provide, thus the study. The state of a country's infrastructure is a major determinant of economic growth, social welfare, and trade. Land transport, maritime transport, and electricity infrastructure are critical to the ability of sub-Saharan African (SSA) countries to produce and export the vast majority of goods destined for regional and global export markets. Poor infrastructure conditions increase costs and compromise product quality and are a significant competitive disadvantage to the SSA industries.
These delays increase economic distance and often reduce product quality, particularly for perishable goods, leading to higher rejection rates, higher production costs, and lower income for producers. For instance, Rwandan coffee producers require an average

of 42 days to export, excluding maritime transport, owing to long distances to port, poor road conditions, and customs delays. In contrast, Colombian producers require only 14 days to export, excluding maritime transport. These delays suggest that Rwandan coffee exporters face a 36 percent tariff equivalent compared to Colombian coffee exporters, significantly reducing income potential for Rwanda's 500,000 coffee farmers (World Report Spring, 2006).

According to National Coffee Strategy (2009-2012), Many CWS also lack the necessary staff with financial skills. That CWSs are poorly organized and lacking in financial skills was one of the main complaints of the banking sector. However, this lack of skills has a serious impact on the management of CWSs and on their profitability. For example, the lack of financial know-how and last minute planning has affected many CWSs applications for loans. Some CWSs apply for loans after the season has already started (February) and don't get their requests processed in time. Had they sent in their loan applications on time (before the start of the season), they would have been processed in no more than 2-3 weeks and they would have had access to funds at the crucial time in the season.

The National Coffee Strategy (2009-2012) asserts that although the amount of fully washed coffee has increased from 1% to 20% of production from 2002 to 2007 due to significant private sector investments in coffee washing stations, many are not profitable because of high operating costs, weak management and financial issues. Government, financial institutions and donors should work together with the private sector on these issues to make fully washing coffee more attractive and profitable.

The processing sub-sector appears to be working under capacity with washing stations operating at 30%. Recent studies done on washing stations showed that, in general, they operate at around 30% of their installed capacity not only because of the unavailability of cherries but also in large part because of inadequate business planning and management (which could also contribute to inflated overall installed capacity estimates). The fact that almost all washing stations run under capacity obviously affects their profitability.

c. Political Factors

As public funds are limited, it is natural to ask: Is agriculture the best use of the marginal dollar of government expenditure in a developing country? Should that dollar be spent on agriculture rather than health, physical infrastructure, cash grants, or land purchases for the poor? So priority of education will greatly depend on the political dimensions in question.

Myers (1994), argues that countries / communities that are at war or that has high degree of internal conflict be especially political conflict, or one that is recovering from conflict will provide a very different context for any development program from the one that stable, democratic, and peaceful. This dimensions of context will not only affect the location and continuity of services, but may require major adjustments in content, for instance, the inclusion of a programme to help people deal with trauma of war. Then it's important that Myers argument is investigated in the context of the political factors that have a potential of affecting the performance of locally owned coffee washing stations in Rusizi District thus this study.

Cole (2002) defines leadership as inspiring people to perform. Armstrong (2001) defines leadership as influencing power and legitimate authority acquired by a leader to be able to effectively transform the organization through direction of human resource. Blowfield , M.1999 noted that politicians are affecting delivery of services in a positive and negative way. Where the politicians work with civil servants as a team, they have facilitated delivery of services. On the other hand politicians are hindering service delivery in some districts by misinforming the citizens and clashing with civil servants. Blowfield's assertion is more general to service delivery, so the study will investigate the influence of political leadership with specific reference to CWSs.

d. Weather And Climatic Factors

Rwanda's farmers depend mainly on natural climatic conditions for their farming practice. Coffee farmers in Rusizi similarly depend on the natural rainfall patterns to sustain their coffee plantations. Under this variable, we are looking at rainfall patterns, draught patterns and climate change.

Several studies have shown that coffee bean is a nutrient rich fruits and its production requires a considerable amount of water/rainfall and nutrients. It involves nutrients coming from fertilizers, the atmosphere and waterways and without fertilization, this nutrient balance is negative (Wintgens, 2004). According to Boffa (2005), sustained coffee production requires regular rainfall and application of organic or inorganic fertilizer. Smallholder farms with no access to external inputs often produce less than 300 kg/ha/year green coffee beans, while intensively managed plantations of Arabica coffee at conventional spacing may yield annually 2 t/ha/year (SÖndahl et al. 2005). Other study found that fertilizer was just as important as improved seed, contributing as much as 50 percent of the yield growth in Asia (Tomich et al. 1995)

Coffee, particularly Arabica, is sensitive to extreme weather conditions such as frost, drought, or wetness which can reduce the volume and value of a crop by up to 50%, as can pests. Unlike the large coffee plantations in Latin America, smaller farms in East Africa, averaging only 1 to 2 hectares3 of land, produce the majority of East African coffee (FAO, 2001). Because virtually all East African agriculture is rain fed and uses few purchased inputs, coffee production can be subject to a high degree of variability both in terms of volume and quality from year to year. According to the National Coffee Strategy (2009-2012) the actual quantity of coffee produced in Rwanda has failed to meet strategy targets partly because of the following reasons: Oscillations in production due to weather, diseases, etc which can be minimized through the adoption of better farming practices.

The United States Environmental Protection Agency (2013) refers to climate change as any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among others, that occur over several decades or longer. Several studies have begun to assess the impact of climatic changes on major food crops at a global scale (Parry et al., 2004; Porter and Semenov, 2005; Lobell and Field, 2007). Lobell and Field (2007) investigated the effects of changes in recent climate (1961-2002) on global yields of six key food crops (wheat, rice, maize, soy, barley and sorghum). They found that at least 29% of the variance in annual yields could be attributed to temperature and

precipitation changes (Lobell and Field, 2007). Without climate change trends since 1981, production of wheat, maize and barley in 2002 would have been 2-3% higher than actually recorded (Lobell and Field, 2007).

The results from Parry *et.al* (2004) support the above findings, and suggest that national cereal yields are likely to decline by up to 30% in developing countries by 2080. The results of a multiple regression model also show that coffee production in Veracruz Mexico is expected to become uneconomical by 2020 (Gay *et al.*, 2006).

Studies have investigated the impact of climatic change on key food crops in East Africa, but there is little evidence of investigation into the changes in yield of high value agricultural crops such as coffee (Thornton *et al.*, 2009). A future decline of coffee yields could greatly affect the economy of large producer countries (Gay *et al.*, 2006; Eakin and Wehbe, 2009; Tucker *et al.*, 2010), Existing research conclude that climate change will have significant impacts on agriculture in the East African region (Karanja,2002). This conclusion is based on modelling studies that have been built to show areas where those impacts will be largest and to help guide adaptations to ensure food security in the next several decades.

Agriculture itself is a major driver of environmental and climate change (FAO, 2007). These influences are passed on by human activities on land and water resources. Agriculture's dependence on water for irrigation is the main source of water resources consumed from lakes, aquifers and rivers. As a result of these activities, agriculture contributes immensely to land degradations, particularly in the emission of greenhouse gas emissions (Barrientos and Tallontine, 2003). We also need to investigate how climate change affects the performance of CWSs in Rusizi district.

e. External Factors/ Macroeconomic Factors

The macroeconomic policy stability, Gross Domestic Product, Inflation, Interest Rate and Political instability is also other macroeconomic variables that affect the performance of companies. For instance, the trend of GDP affects the demand for banks asset. During the declining GDP growth the demand for credit falls which in turn negatively affect the profitability of banks. On the contrary, in a growing economy as expressed by positive GDP growth, the demand for credit is high due to the nature of business cycle. During boom the demand for credit is high compared to recession (Athanasoglou et al., 2005). The same authors state in relation to the Greek situation that the relationship between inflation level and banks profitability is remained to be debatable. The direction of the relationship is not clear (Vong and Chan, 2009).

2.2.2. Indicators of Performance

Performance should be looked at in terms of economy, efficiency and effectiveness. Economy and efficiency are usually measured in terms of data such as cost, volume of sales and productivity. Effectiveness is measured in terms of quality of services, customer satisfaction and achievement of goals (Bemberger, 1983). Colvin etal…, (1998) noted that for a firm to perform very well, it should have clear objectives aimed at quality management and be able to compete both in the short run and long run and argued that performance is the ability of the firm to meet both its long term and short term goals efficiently and effectively.

2.2.2.1. Measuring Performance

Performance measurement is the process of regular and systematic data collection, analysis and reporting to be used by a firm to follow up the resources it uses, the results it obtained with the produced goods and services (Bamberger, 1983). According Kaplan and Norton (1992), performance can be assessed by the use of the balanced score card (BSC), it addresses other aspects that do not incorporate financial measurements but rather intangible and intellectual assets such as high quality services or royal customers which are more critical to the success of the business.

According to Griffon and Guillaumont (2004), Measuring performance aims at facilitating employee develop and for the following major purposes: to provide feedback and guidance, to set performance goals, to identify training needs and to provide input for management of pay administration, reward and promotion. The steps involved in effective performance include: identification of key performance areas and setting yearly objectives for each key performance indicator, identification of critical of attributes of effective performance, periodic review of performance, and discussion of performance with employees and identification of training and development needs.

When you run your own business or have a vested interest in one through your investments, you need to know how to evaluate its performance based on facts and numbers. There are several parts in a business to watch. Here are some tips to measure the performance of a business and make appropriate changes to achieve your goals effectively (Mercy, 2001) evaluate the assets and liabilities of the business from the balance sheet, review the cash flow to assess operating, financial and investing activities, the effects of these activities can be understood through income and expenses from the statement of income do internal comparison of cost and sales to understand if the amount of stock accumulated is increasing while sales remains stagnant, indicating poor utilization of stock. Compare the debtor and creditor values between past and present balance sheets to measure credit history, understand the customer satisfaction level through complaints and reviews from the end users, having consistency and quality in performance and reliability improves (Dixon, 1990).

Likert (1998) opine that performance measure initiatives fail because of poor design and difficulties in its implementation. Organizational performance needs to be measured along both organizational level and work unit level requiring complementary dimensions and information for planning, tracking, analysis and improvement. Wahab (2000) argues that performance measures must focus attention on what makes, identifies and communicate the drivers of success, support organizational learning and provide a basis for assessment and reward. Dixon (1990) adds that appropriate performance measures are those which enable the firm to direct their

actions towards achieving their strategic objectives. Performance measures used are those which support the business objectives, this is because the firm's performance is central to the future well being and prosperity of an enterprise.

2.2.2.2. Performance Indicators

Profit is the ultimate goal of all corporate organization. All the strategies designed and activities performed thereof are meant to realize this grand objective. However, this does not mean that companies have no other goals. Companies could also have additional social and economic goals. However, the intention of this study is to analyze performance of business organization which include profitability, management efficiency, liquidity and Competiveness (Murthy and Sree, 2003; Alexandru et al., 2008).

a. Profitability

According to Ssejaka (1996), profitability has been the widely used measure of performance. Profitability is the excess of income over expenditure which can be expressed by the ratios like gross profit margin, net profit margin and return on equity. However, profit as a measure of performance has got a lot of limitations. Burns (1999) argued that profit is ambiguous as it can be looked at differently by different people for example Economists and Accountants. It also involves a lot of estimations like depreciation and stock valuation which end up giving different values according to methods used. Drucker (1990) points out that the common accounting performance measure of profit and cost rarely support changes in the organizational structure and size, thus non financial measures like management and employee skills and their turnover must be used to fit within the strategic framework.

b. Competiveness (ROE)

ROE is a financial ratio that refers to how much profit a company earned compared to the total amount of shareholder equity invested or found on the balance sheet. ROE is what the shareholders look in return for their investment. A business that has a high competiveness is more likely to be one that is capable of generating cash internally. Thus, the higher the ROE the better the company is in terms of profit generation. It is further explained by (Khrawish, 2011) that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the company by its stockholders. ROE reflects how effectively a firm management is using shareholders" funds. Thus, it can be deduced from the above statement that the better the ROE the more effective the management in utilizing the shareholders capital.

c. Management Efficiency

Management Efficiency is one of the key internal factors that determine a company's performance. It is represented by different financial ratios like total asset growth and earnings growth rate. Yet, it is one of the complexes subject to capture with financial ratios. Moreover, operational efficiency in managing the operating expenses is another dimension for management quality. The performance of management is often expressed qualitatively through subjective evaluation of management systems, organizational discipline, control systems, quality of staff, and others. Yet, some financial ratios of the financial statements act as a proxy for management efficiency. The capability of the management to deploy its resources efficiently, income maximization, reducing operating costs can be measured by financial ratios. The higher the operating profits to total income (revenue) the more the efficient management is in terms of operational efficiency and income generation. The other important ratio is that proxy management quality is expense to asset ratio. The ratio of operating expenses to total asset is expected to be negatively associated with profitability. Management quality in this regard, determines the level of operating expenses and in turn affects profitability (Athanasoglou et al. 2005).

d. Liquidity Management

Liquidity is another factor that determines the level of a company's performance. Liquidity refers to the ability of the bank to fulfil its obligations, mainly of depositors. According to (Dang, 2011) adequate level of liquidity is positively related with bank profitability. The most common financial ratios that reflect the liquidity position of a bank according to the above author are customer deposit to total asset and total loan to customer deposits. Other scholars use different financial ratio to measure liquidity. For instance (Ilhomovich, 2009) used cash to deposit ratio to measure the liquidity level of banks in Malaysia. However, the study conducted in China and Malaysia found that liquidity level of banks has no relationship with the performances of banks (Said and Tumin, 2011).

2.2.3. Impact of the Various Factors on Performance of CWS

Social economic, institutional, political and weather and climatic factors have the capacity of affecting the coffee washing stations productivity, quality and profitability. The researcher will be interested in finding out if any relationship exists between these two variables.

a. Increased Production and Performance

The National Coffee Strategy (2009-2012) notes that although some NGOs and Donors (TECHNOSERVE and Clinton Foundation for example), have invested some efforts into improving production of CWSs in Rwanda, this needs to become a standard policy in Rwanda. Perhaps it should become mandatory for any coffee program to invest a percentage in improving farming practices. Another issue that needs to be addressed country wide is that local farmers need to have more and know how to access finances for the improvements that the country is asking for from them. Although there has been a significant increase in the number of washing stations, Rwanda only produced 25% of its fully washed target in 2007.

At the end of 2007, there were 112 CWS with the capacity to process 60 000 tons of cherries and produce 11 500 tons of parchment coffee but these washing stations only processed 17 500 tons of cherries and produced 3650 tons of parchment coffee (a little over 3000 tons of green coffee), which means that they were operating at 30% of their capacity on average 25 due in part to low volume of inputs and in part to improper operations, MINAGRI (2009). If Rwanda wants to meets its specialty coffee targets, the operations of CWS need to significantly improve. This set of literature opens our eyes to the fact that the CWSs in Rwanda are operating and low productivity and performance. This study will find out if some factors are responsible for this.

b. Enhanced quality of coffee
In recent years, different coffee producing countries have tremendously expanded their production and export volume of coffee (Behailu *et al.*, 2008). In the current context of overproduction and low prices of the coffee market, improvement and valorisation of coffee quality could provide the coffee chain with a new momentum (Lorey *et al.*, 2006). According to ISO (2000), quality is described as ''the ability of a set of inherent characteristics of a product, system or produce to fulfil requirements of customers and other interested parties.'' These inherent characteristics can also be called ''attributes''. The quality of coffee in the accepted sense of the term includes the physical, chemical, and organoleptic properties mainly sought after by the consumer (Lorey *et al.*, 2006). These properties which manifest themselves in flavour, aroma, odour, strength, lingering, taste, acidity, astringency, homogeneity, appearance, shape and size, may be very different according to the type of coffee (Arabica, Robusta), the country of origin, and the method adopted for processing, roasting, and even preparation of the brew (Barel & Jacquet, 1994).
According to the ITC (2002), coffee quality is a combination of many factors, including the botanical characteristic of the variety grown, topographical conditions, weather conditions, the care taken during growing, harvesting, processing, storage, export preparation and transport. Growing, harvesting, processing, storage and export preparation are the most variable factors that can influence the determination of quality since varietal and topographical conditions are constant. According to OCIR-Café (2008), the quantity and quality can decline if the maintenance of the farm and trees are not well maintained. This study will investigate other factors apart from the ones mentioned here that could also be responsible for influencing quality of coffee.
OCIR-Café (2008) noted that Rwanda's coffee is often in the low quality and low quantity trap. The quantity trap arises from over rivalry for volume among exporters, these exporters care less about quality but quantity, this leads to poor conditions of coffee plantation and thus reducing the quality as farmers run for quantity against quality. On the other hand as farmers and exporters all run for quantity against quality, there arises the factor of decreasing prices at the international market due to the quality and the low prices de-motivates farmers to grow more coffee. The quality and quantity trap is illustrated below. This study will investigate this trap in Rusize District and see if it affects the locally owned coffee washing stations.
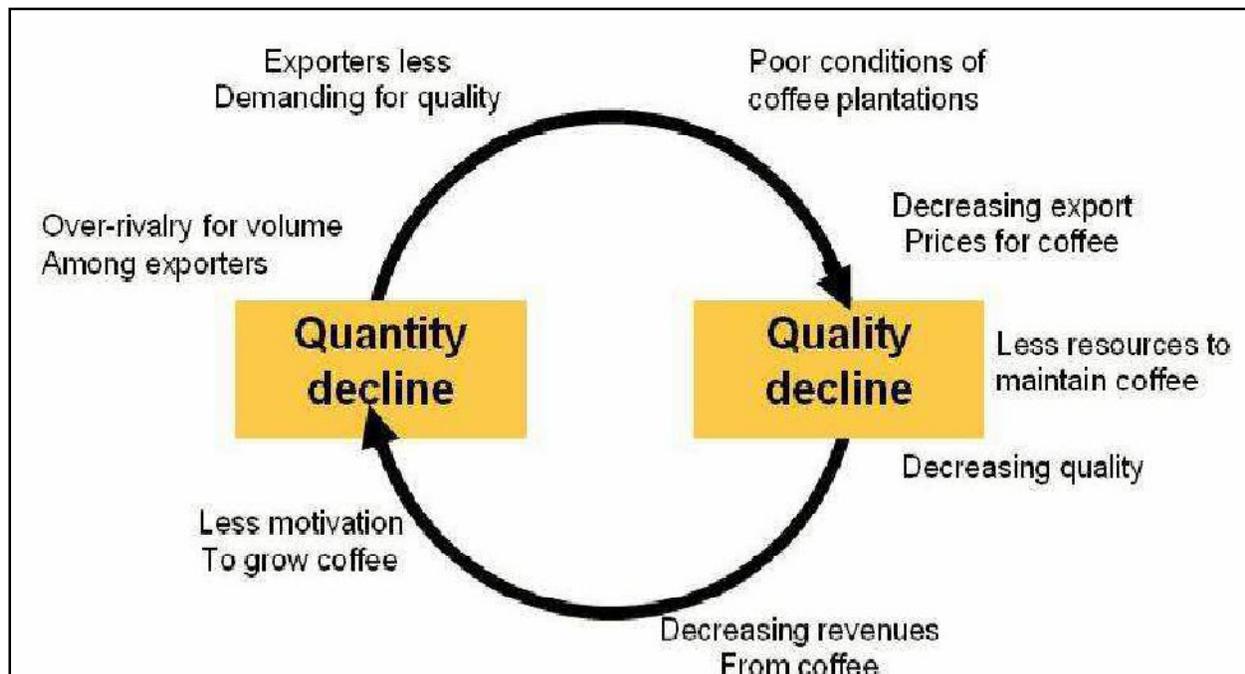
Figure 2: Rwanda's Coffee Low Quality and Low Quantity Trap
Source: OCIR-Café, 2008

c. Increased net income
Available research indicates that Farmers have little or no incentive to improve cherry quality. Although there is undeniable potential, the quality of cherries has not improved as very little has been done to upgrade farming practices since farmers have had very little reason to do so. First, they receive a set price for their product even if their cherries are of a superior quality to another seller. Second,

strong competition for cherries (especially in poor seasons) between CWS and ordinary coffee trades, has ensured that their product have not been turned down regardless of quality. Thus, farmers have neither had to experience the carrot nor the stick.

In 2008, OCIR-Café set the minimum price for cherries at RWF 130. Although, prices rose to RWF 140 and RWF 150 in different regions because of supplies, cherry prices did not vary according to quality. CWS paid a flat rate for cherries, having to accept floaters along with good cherries. If quality of coffee cannot force an increased income in the market than which other factors are responsible? This study will investigate this further.

2.3. Summary of Literature Reviewed

From the literature reviewed, one can conclude that the coffee industry in Rwanda is in the quality- quantity trap. The desire for quantity by the local exporters against demand for quality has affected the quality of coffee and has resulted into the fluctuating and volatile coffee prices in the international market as the international market is about quality. The literature accuses these factors to be responsible for the de-motivation of farmers in the coffee sub- sector and thus the declining coffee production in Rwanda. It also reveals that since most coffee farmers in Rwanda are small-scale producers they are the worst hit by the crisis.

2.4. Research Gaps

According to the literature reviewed, it is evident that few systematic specific and detailed studies have been undertaken to analyse the key factors affecting the performance of coffee washing stations in Rwanda let alone the locally owned coffee washing stations. Most research points to the farmers, local traders and exporters but ignores the washing stations yet washing stations contribute to the coffee value chain as well. There is therefore need for empirical evidence on the factors affecting the performance of locally owned coffee washing stations in Rwanda and this study will address this knowledge gap using a case study of Rusizi District of Rwanda.

It is also evident from the literature that most researchers have generalised the causes of declining coffee production in Rwanda into fluctuating and volatile coffee prices over the years coupled with de-motivated farmers as a result of the low prices. Most farmers have been reportedly hit hard because most farmers are small scale farmers. However none of the researchers has looked deeply into the washing stations which have capacity of enforcing quality of coffee especially looking at factors affecting their performance. This study aims at filling this gap.

3. Research Methodology

3.0 Introduction

This chapter presents the methodology that was used during the study. It involves the Research design, study population, sample size and selection, sampling techniques, data collection methods, Data collection instruments, procedure of data collection and data analysis techniques.

3.1 Research Design

According to Kombo (2006) research design is an outline or plan that is used to generate answers to research problems/questions. A research design is an arrangement of conditions of data collection and analysis. For this study the researcher used descriptive survey methodology designed to assess the factors affecting the performance of locally owned coffee washing stations in Rwanda with a view to offer solutions. The design employed self administration of questionnaires to a sample of individuals. The questionnaires were aimed at finding peoples' attitudes, and opinion about performance and factors affecting coffee washing stations in Rwanda. The researcher used both primary and secondary data. Primary data was obtained using questionnaires while secondary data was gathered from the documents available at the washing stations and journals.

3.2. Study Population

The study focused on 19 locally owned coffee washing stations in Rusizi district as seen below with total population of 96 members.

3.3. Sample Design

Stratified sampling technique was used to choose different locally owned coffee washing stations in Rusizi district to be investigated and this followed Census whereby the researcher took the whole population that resulted from 19 coffee washing stations: basing on the name of the washing stations and owners of the washing stations. The locally owned washing stations chosen are listed below:

Name of the Washing Stations	Owners of CWS	Population	Sample	Techniques
Nzahaha	COCAGI	6	6	Stratified and Census
Nzahaha	Nzahaha CWS	4	4	Stratified and Census
Gashonga	Gashonga coffee	6	6	Stratified and Census
Rwimbogo	Rusizi specialty coffee	7	7	Stratified and Census
Nzahaha	Nyanji CWS	5	5	Stratified and Census
Gikundamvura	Busozo Hills coffee	5	5	Stratified and Census
Gikundamvura	Imena Coffee	5	5	Stratified and Census
Gitambi	CODECABU CWS	6	6	Stratified and Census
Nyakabuye	COPROFICAG	6	6	Stratified and Census
Nyakabuye	COPROCANYA	6	6	Stratified and Census
Nyakabuye	IMPEXICOL	4	4	Stratified and Census
Gitambi	TURENGERIKAWA	5	5	Stratified and Census
Gitambi	TUZAMURANE	5	5	Stratified and Census
Gihundwe	Mashesha CWS	4	4	Stratified and Census
Gihundwe	MJ Gihundwe CWS (SDLMJ)	4	4	Stratified and Census
Nyakarenzo	NCMC	5	5	Stratified and Census
Nkanka	Kinyaga coffee	4	4	Stratified and Census
Mururu	Mururu CWS	5	5	Stratified and Census
Giheke	Gisuma coffee	4	4	Stratified and Census
Total		96	96	Stratified and Census

Table 1: Sample Frame
Source: Coffee Board (2015)

With this kind of technique, the researcher was certain to include elements that are presumed to be typical of a given population about which the researcher seeks information. According to Black (1976), census does not involve any random selection process. Further, according to Welman and Kruger (2001), the advantage of non probability sampling is that it is economical and less complicated. In using purposive sampling, the intention of the researcher is to concentrate on owners and management of the different locally owned coffee washing stations in Rusizi district.

3.4. Data Collection Instrument

3.4.1. Questionnaires
This is an important method of data collection. Judd (1991) said that a questionnaire is justifiable in data collection mainly because; it enables the researcher to collect large amount of data within a short time period, it also provides opportunity for respondents to give frank, anonymous answers. The questionnaire was designed in a way that they are both open and closed ended in order to give respondents freedom to exercise the opinions. The questionnaire was written in a simple and clear language for the respondent to feel free while answering. In addition to that the use of questionnaire is considered vital to the research since it provides accurate information regarding the study.

3.4.2. Documentary Review
This research also reviewed literature obtained from the case study organization. These literatures included financial statement, annual reports and other reports from the different locally owned coffee washing stations in Rusizi district. This method was chosen because; it is vital in providing background information and facts about e banking on performance of the bank before primary data could be collected. Indeed, before field data is collected, a wide collection of data had been collected and this was used to cross check with the primary data that was obtained by the field.

3.5. Validity and Reliability
The validity of data was checked before processing the results. This helped to establish the reliability of the tools to be used in data collection. This was done by pre-testing the questionnaires using sample of 19 respondents from different locally owned coffee washing stations in Rusizi district, similarly interview guide was checked by interviewing 19 respondents. This process is aided correction of the mistakes and errors within the tools of data collections to verify how they are reliable to produce significant information from the field. The reliable data was got and this minimized statistical errors.

3.6. Data Analysis
The data collected was processed and analyzed using SPSS. This involved data coding, editing and tabulation especially quantitative data. The purpose of all these is to make the information clear and understandable for other people. Qualitative analysis technique was used. The Qualitative analysis technique was complemented with some statistics that was mainly obtained from the secondary data

that were obtained through documentary analysis from the case study organization. A few statistics to be obtained from the primary data and was included in this research.

4. Research Findings and Discussion

This chapter presents empirical findings in reference to the research questions in chapter one. These findings were obtained from both primary and secondary sources. The findings were presented and analyzed using, mean, standard deviation, frequency tables and percentages on in determining the factors affecting the performance of locally owned coffee washing stations in Rusizi district, Rwanda.

4.1. Profile of the Respondents

4.1.1. Gender of the Respondents
Table 2 shows gender of the respondents

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	71	74.0	74.0	74.0
	Female	25	26.0	26.0	100.0
	Total	96	100.0	100.0	

Table 2: Gender of the respondents
Source: Primary Data, 2015

From table 2 above, 74% were male while 26% were males. This shows that respondents were more male than female. This was confirmed by the responses from the questionnaires filled where males were more than females. More significantly it shows that data obtained is free of gender bias.

4.1.2. Age Structure of the Respondents
Table below shows age structures of the respondents

Age Group	Frequency	Percent	Valid Percent	Cumulative Percent
21 – 30	39	40.6	40.6	40.6
31 – 40	39	40.6	40.6	81.3
41 – 50	13	13.5	13.5	94.8
50 and above	5	5.2	5.2	100.0
Total	96	100.0	100.0	

Table 3: Age structure of the respondents
Source: Primary Data, 2015

From table 3 above, 40.6% of the respondents were between 31 - 40, 40.6% between 21 - 30 , 13.5% were between 41 – 50, and 5.2% above 50 years. This implies that there was fair representation of the population as almost all classes were represented and the data provided reflected the views of the entire population and the majority of the respondents are matured which means they gave a matured view.

4.1.3 Educational Level of the Respondents
Table 4 shows educational level of the respondents

Educational Status	Frequency	Percent	Valid Percent	Cumulative Percent
Secondary	50	52.1	52.1	52.1
Undergraduate	34	35.4	35.4	87.5
Post graduate	12	12.5	12.5	100.0
Total	96	100.0	100.0	

Table 4: Educational level of the respondents
Source: Primary data, 2015

From table 4 above, 52.1% of the respondents were secondary holders, 35.4% was under graduate and 12.5% post graduate. This implies that the respondents are educated which means could read, understand and interpret questionnaires reliably. The data collected was believed to be reliable and was thus processed to present findings.

4.1.4 Experience Level of the Respondents
Table 5 shows experience of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
1 -2 years	14	14.6	14.6	14.6
2 -3 years	25	26.0	26.0	40.6
3 -4 years	22	22.9	22.9	63.5
5 years and above	35	36.5	36.5	100.0
Total	96	100.0	100.0	

Table 5: Experience level of the respondents
Source: Primary data, 2015

From table 5 above, 36.5% of the respondents had served in the locally owned washing stations for a period of 5 years and above, 26.0% between 2 – 3 years, 22.9% between 3 – 4 years and 14.6% for a period between 1-2 years. This implies that almost all respondents had taken reasonably enough time in service and thus the data they provided was believed to be reliable.

4.2. Factors Affecting Performance of Selected Locally Owned CWS in Rusize District

4.2.1. Assessing Availability of Factors Affecting Selected Locally Owned CWS
Table 6 below shows respondents views on ascertaining whether they are factors affecting selected locally owned coffee washing stations in Rusize District

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	96	100.0	100.0	100.0

Table 6: Response to factors affecting selected locally owned CWS
Source: Primary data, 2015

Table 6 above shows all the respondents agreed that they are factors affecting performance of locally owned coffee washing stations in Rusize District. This implies that locally owned coffee washing stations in Rusize District has factors which needs to be addressed in order to improve their performances accordingly.

4.2.2. Factors Affecting Locally Owned Coffee Washing Stations
The table 7 below shows respondents views on the various factors affecting locally owned coffee washing stations

Factors affecting locally owned CWS	Mean	Std. Deviation	Comments
Population and land shortage	4.8542	.35479	Very strong homogeneity
Diversity farming	4.8333	.37463	Very strong homogeneity
Coffee price	4.7708	.42250	Very strong homogeneity
Infrastructural factors ie electricity and water	4.6979	.46157	Very strong homogeneity
Inadequate and poorly skilled workers	4.5833	.49559	Very strong homogeneity
Law and procedures	4.6354	.48384	Very strong homogeneity
In adequate Financial Resources	4.6667	.47388	Very strong homogeneity
Weather and climate	4.7396	.44117	Very strong homogeneity
Valid N (listwise)	96		

Table 7: Factors affecting locally owned Coffee Washing Stations
Source: Primary data, 2015

The table 7 shows the perceptions of respondents the various factors affecting locally owned coffee washing stations and their responses were as follows:
Effects of Population growth and land shortage: Respondents view is reflected by a very strong mean of 4.8542 and homogeneity standard deviation of .35479. This implies population growth and land shortage is a great challenge to the locally owned coffee washing stations in Rusizi District because in order to farming to be conducted on a large scale then there should be enough land for expansion and growth.
Effects of diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises): Respondents view is reflected by a very strong mean of 4.8333 and homogeneity standard deviation of .37463. This implies that some farmers have abandoned coffee growing for other agriculture enterprises and this is a big challenge for CWS as they lack coffee for processing hence making some of the washing stations to close.

Effects of Coffee prices fluctuations: Respondents view is reflected by a very strong mean of 4.7708 and homogeneity standard deviation of .42250. This implies that coffee price fluctuation in the world market is one of the factors affecting locally owned coffee washing stations in Rusizi district because they are forced to sell their coffee at a low price hence reduction in expected profitability.

Effects of Infrastructural factors like electricity, water and bad road: Respondents view is reflected by a very strong mean of 4.6979 and homogeneity standard deviation of .46157. This implies that absence of electricity, shortage of water and bad roads leading to the farmers affects performance of locally owned coffee washing stations in Rusizi district which needs to be addressed.

Effects of Inadequate and poorly skilled workers: Respondents view is reflected by a very strong mean of 4.5833and homogeneity standard deviation of .49559. This implies that not all staffs in the washing stations as well as farmers are skilled in handling their different responsibilities of quality coffee management which needs to be addressed in order to have quality coffee ready for the world market.

Effects of Management Process and Systems inform of law and procedures: Respondents view is reflected by a very strong mean of 4.6354 and homogeneity standard deviation of .48384. This implies that management process and system inform of law and procedure is a challenge to the locally owned coffee washing stations, for example land policy and other coffee management related rules.

In adequate financial resources for expansion: Respondents view is reflected by a very strong mean of 4.6667 and homogeneity standard deviation of .47388. This implies that financial resources inform of business capital is inadequate and this limits the expansion of the locally owned coffee washing stations in Rusizi district.

Effects of weather and climate factors: Respondents view is reflected by a Vvry strong mean of 4.7396 and homogeneity standard deviation of .44117. This implies that weather and climate factors highly affect performance of locally owned coffee washing stations in Rusizi district.

Therefore, it can be concluded that locally owned coffee washing stations in Rusizi district is faced with a lot of factors ranging from population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Others factors are Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors.

4.3. Performance measures of Locally Owned Coffee Washing Stations in Rusizi district

4.3.1. Performance Measures of Locally Owned CWS.
Table 8 below shows resondents views on the various forms of performance measures of used by locally owned coffee washing stations in Rusizi district.

Performance measures locally owned CWS	Mean	Std. Deviation	Comments
Productivity	4.6150	.48728	Very strong homogeneity
Quality	4.8199	.38477	Very strong homogeneity
Efficiency	4.5873	.49301	Very strong homogeneity
Competeviness	4.5789	.49441	Very strong homogeneity
Profitability	4.8333	.37463	Very strong homogeneity
Growth and expansion	4.7708	.42250	Very strong homogeneity
Valid N (list wise)	96		

Table 8: Performance measures of locally owned CWS
Source: Primary data, 2015

Table 8 shows that the resondents views on the various forms of performance measures of used by locally owned coffee washing stations in Rusizi district. All the respondents agreed by very strong mean of above 4.5 and homogeneity standard deviation of below .5 that productivity, quality of coffee, efficiency, competeviness, profitability and expansion and growth are the measures used to measure performance of locally owned CWS in Rusizi district. This implies that locally owned coffee washing stations performance measures of measured using various performance measures which is a good sign of investment promotion but profitability and quality of coffee are the major performance measures used as reflected by mean and standard deviation above.

4.3.2. Performance Measurement Tools
The table below shows respondents views on performance measurement tools used by locally owned coffee washing stations in Rusizi district

Performance Measures tools used by CWS	Mean	Std. Deviation	Comments
Balance Score Card	4.7396	.44117	Very strong homogeneity
Quality assurance	4.8199	.38477	Very strong homogeneity
Assessment model	4.5873	.49301	Very strong homogeneity
Valid N (list wise)	96		

Table 9: Performance Measurement tools
Source: Primary data, 2015

From table 9 shows that the respondents agreed that quality assurance is the performance measurement tools used by locally owned coffee washing stations in Rusizi district, reflected by a very strong mean of 4.8199and homogeneity standard deviation of .38477, balance score card reflected by a very strong mean of 4.7396 and homogeneity standard deviation of .44117 and assessment model tools reflected by a very strong mean of 4.5873and homogeneity standard deviation of .49301. This implies that locally owned coffee washing stations in Rusizi district have various performance measurement tools they use but majorly quality assurance and Balance Score Card.

4.3.3. Review of Performance Measurement Tools
Table below shows the intervals at which performance measurement tools are reviewed

	Frequency	Percent	Valid Percent	Cumulative Percent
Monthly	23	24.0	24.0	24.0
Quarterly	24	25.0	25.0	49.0
Half yearly	12	12.5	12.5	61.5
Yearly	37	38.5	38.5	100.0
Total	96	100.0	100.0	

Table 10: Review of performance measurement tools
Source: Primary data, 2015

Table 10 shows that, 38.5% agreed that performance locally owned coffee washing stations in Rusizi district are evaluated every year, 25% quarterly, 24% monthly and 12.5% half yearly. This implies that performance locally owned coffee washing stations in Rusizi district is evaluated and reviewed at different intervals depending on the individual washing stations but mostly monthly and yearly.

4.3.4. Review of Performance Coffee Washing Stations from 2011 to 2014
Table 11 shows the performance of CWS according to different locally owned washing stations in Rusizi district. The performance are arranged according to Theoretical capacity in Cherries, Cherries processed season 2011 (t) and Capacity utilization rate (%)

Washing Stations	2011			2012			2013			2014		
	Theoretical capacity in Cherries	Cherries processed season 2011 (t)	Capacity utilization rate (%)	Theoretical capacity in Cherries	Cherries processed season 2011 (t)	Capacity utilization rate (%)	Theoretical capacity in Cherries	Cherries processed season 2011 (t)	Capacity utilization rate (%)	Theoretical capacity in Cherries	Cherries processed season 2011 (t)	Capacity utilization rate (%)
COCAGI	500	604	121	500	500	100	500	829	166	500	568	114
Nzahaha CWS	500	219	44	500	320	64	500	73	15	500	456	91
Gashonga coffee	150	155	103	150	280	187	150	123	82	150	189	126
Rusizi specialty coffee	1,000	1,200	120	1,000	900	90	1,000	986	99	1,000	725	73
Nyanji CWS	250	165	66	250	260	104	250	334	134	250	72	29
Busozo Hills coffee	500	560	112	500	480	96	500	259	52	500	162	32
Imena Coffee	500	603	121	500	265	53	500	292	58	500	267	53
COPROFIPAG	1,000	505	51	1,000	285	29	1,000	317	32	1,000	293	29
COPROCANYA	500	781	156	500	687	137	500	500	100	500	547	109
IMPEXICOL	1,000	1,205	121	1,000	2,435	243	1,000	791	79	1,000	1,250	125
TURENGERIKAWA	250	182	73	250	398	159	250	216	86	250	236	94
TUZAMURANE	250	312	125	250	612	245	250	395	158	250	184	74
Mashesha CWS	500	155	31	500	278	56	500	120	24	500	260	52
MJ Gihundwe CWS	500	504	101	500	553	111	500	304	61	500	318	64
EDEN CWS	500	51	10	500	87	17	500	40	8	500	-	-
NCMC	500	606	121	500	674	135	500	502	100	500	507	101
Kinyaga coffee	150	97	65	150	71	47	150	72	48	150	50	33
Mururu CWS	250	128	51	250	215	86	250	84	33	250	235	94
Gisuma coffee	150	224	149	150	360	240	150	259	173	150	218	145

Table 11: Review of performance Coffee Washing Stations from 2011 to 2014
Source: Coffee Washing Stations performance 2011 – 2014

The analysis shows analysis of CWS according to different locally owned washing stations in Rusizi district. The performance are arranged according to Theoretical capacity in Cherries, Cherries processed season 2011 (t) and Capacity utilization rate (%). The analysis shows that the locally owned CWS are performing below their capacity with exception of few which could be attributed to factors analyzed in table 6.

4.4. Impact of Different Factors on Performance of Selected Locally Owned CWS

4.4.1. Mpact of Different Factors on Performance of Selected Locally Owned CWS
   Table 12 below shows respondents views on effects of various factors on performance of locally owned coffee Washing Stations.

Effects various factors on performance of locally owned Coffee Washing Stations	Mean	Std. Deviation	Comments
Effects on Profitability of the washing station	4.8338	.37278	Very strong homogeneity
Effects on productivity of the washing station	4.8061	.39590	Very strong homogeneity
Effects on the quality of coffee	4.7147	.45219	Very strong homogeneity
Effects on efficiency of the washing station	4.6979	.46157	Very strong homogeneity
Effects on Competeveness	4.7396	.44117	Very strong homogeneity
Effects on expansion and growth	4.6354	.48384	Very strong homogeneity
Valid N (listwise)	96		

Table 12: Effects various factors on performance of locally owned CWS
Source: Primary Data, 2015

The table 12 shows the perceptions of respondents on the effects of various factors on performance of locally owned Coffee Washing Stations.
The effects of the factors on Profitability of the Washing Stations: Respondents view is reflected by a very strong mean of 4.8338 and homogeneity standard deviation of .37278. This means profitability of locally owned Coffee Washing Stations in Rusizi district is affected by the various factors discussed above that is why the CWS could not meet their target inform of production hence they operate below their capacity as seen in table 11.
The effects of the factors on productivity of the Washing Stations: Respondents view is reflected by a very strong mean of 4.8061 and homogeneity standard deviation of .39590. This implies that to a large extent the various factors have effects on productivity of the locally owned coffee washing stations. For example most locally owned coffee washing stations operate below their expected capacity as seen in table 11.
The effects of the various factors on the quality of coffee: Respondents view is reflected by a very strong mean of 4.7147 and homogeneity standard deviation of .45219. This implies that quality of coffee is affected by many factors hence there is a challenge in world market as they cannot compete favourably.
The effects of the various factors on the efficiency of the washing station: Respondents view is reflected by a very strong mean of 4.6979 and homogeneity standard deviation of .46157. This implies that efficiency of locally owned Coffee Washing Stations in Rusizi district efficiency is affected for example they cannot raise the expected production capacity in time and they are forced to spend a lot of money especially to overcome infrastructural factors.
The effects of the various factors on competeveness of the coffee washing station Respondents view is reflected by a very strong mean of 4.7396 and homogeneity standard deviation of .44117. This implies that the factors makes locally owned washing stations not to compete favourably in the world market for example in the world market quality issue is a very big factor considered in coffee world market of coffee as well as quantity supplied.
The effects of the various factors on growth and expansion of the coffee washing station: Respondents view is reflected by a very strong mean of 4.6354 and homogeneity standard deviation of .48384. This implies that on growth and expansion of locally owned Coffee Washing Stations in Rusizi district is affected by many factors as analyzed in table 7 above.
In conclusion it can be stated various factor or factors comprising of;   population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors affects profitability, productivity, quality of coffee, efficiency, competeveness and growth and expansion of the washing stations.

4.4.2. Relationship between Various Factors Affecting CWS and Performance of CWS
Table 13 shows relationship between various factors affecting CWS and performance of CWS in Risizi district.

		Various Factors Affecting CWS	Performance of CWS
Various Factors Affecting CWS	Pearson Correlation	1	.975**
	Sig. (2-tailed)		.000
	N	96	96
Performance of CWS	Pearson Correlation	.975**	1
	Sig. (2-tailed)	.000	
	N	96	96
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 13: Relationship between various factors affecting CWS and performance of CWS

The table 13 is giving the relationship between factors affecting performance of locally owned washing stations and Performance of washing stations whereby the respondents N is 96 and the significant level is 0.01, the results indicate that independent variable has positive high correlation to dependent variable equal to .975[**] and the p-value is .000 which is less than 0.01. When p-value is less than significant level, therefore researchers conclude that variables are correlated and null hypothesis is rejected and remains with alternative hypothesis. This means that there is a significant relationship between factors affecting performance of locally owned washing stations and Performance of locally owned washing stations in Rwanda. In conclusion it can be stated various factor or factors comprising of;   population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors affects profitability, productivity, quality of coffee, efficiency, competeiveness and growth and expansion of the washing stations.

5. Summary of Findings, Conclusion and Recommendation

5.1. Summary of Findings

5.1.1. Factors Affecting Performance of Selected Locally Owned CWS in Rusize District
All the respondents agreed that they are factors affecting performance of locally owned coffee washing stations in Rusize District. The locally owned coffee washing stations in Rusizi district are faced with a lot of factors ranging from population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Others factors are Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors factors.

5.1.2. Performance of Locally Owned Coffee Washing Stations in Rusizi District
The respondents agreed that locally owned coffee washing stations performance measures are quality of financial statement and services, productivity, effectiveness financial control and fairness and equity. The washing stations use various performance measurement tools namely; quality assurance, balance score card and assessment model tools. The performance of locally owned coffee washing stations in Rusizi district is evaluated and reviewed at different intervals depending on the individual washing stations but mostly monthly and yearly.

5.1.3. Impact of Different Factors on Performance of Selected Locally Owned CWS
The respondent stated that they are various factor or factors comprising of;   population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors affects profitability, productivity, quality of coffee, efficiency, competeiveness and growth and expansion of the washing stations.

5.2. Conclusion
There various factors affecting performance of performance of locally owned washing stations. The table 12 gave the relationship between factors affecting performance of locally owned washing stations and Performance of washing stations whereby the respondents N is 96 and the significant level is 0.01, the results indicate that independent variable has positive high correlation to dependent variable equal to .975[**] and the p-value is .000 which is less than 0.01. When p-value is less than significant level, therefore researchers conclude that variables are correlated and null hypothesis is rejected and remains with alternative hypothesis. This means that there is a significant relationship between factors affecting of locally owned washing stations and Performance of locally owned washing stations in Rwanda. In conclusion it can be stated various factor or factors comprising of; population growth and land shortage, diversionary farming enterprises (Some farmers have abandoned coffee growing for other agriculture enterprises), coffee prices fluctuation and Infrastructural factors like electricity, water, bad road and others. Inadequate and poorly skilled workers, CWS Management Process and Systems inform of law and procedures and other administrative issues, in adequate financial resources for expansion and lastly weather and climate factors affects profitability, productivity, quality of coffee, efficiency, competeiveness and growth and expansion of the washing stations.

5.3. Recommendation
The following recommendations should be put in place in order to improve performance of coffee washing stations in Rusizi district:
  i.   The government should establish proper policy which should help farmers promote coffee growing.
  ii. Capacity building inform of training and seedling in order to promote coffee farming.
  iii. Increase quality of coffee by processing to all coffee in washing stations.
  iv. Regular evaluation of coffee performance in order to come up with solutions

v.   provision of loans to the farmers and washing stations in order to increase their capital investment capacity
vi.   Establishing of coffee cooperatives in order to manage farmers issues effectively and efficiently
vii.   Coffee Market information should be shared among stakeholders on regular basis.

6. References

i.   Akiyama, T. &. Varangis, P (1990).The Impact of the International Coffee Agreement on Producing Countries, World Bank Economic Review 4(2): 157-173.
ii.   Amin M.E (2005) Social Science Research Conception. Methodology and Analysis. Makerere in Uganda. Kampala.
iii.   Barrientos, S. C. and. Tallontire, A (2003). A Gendered Value Chain Approach to Codes of Conduct in African Horticulture. World Development 31(9): 1511-1526.
iv.   Bates, R.H. (1997) Open-Economy Politics: The Political Economy of the World Coffee Trade Princeton. Princeton University Press.
v.   Blowfield, M. (1999). Ethical Trade: A Review of Developments and Issues. Third World Quarterly 20(4):753-770.
vi.   Boffa, J.M. (2003) Research and Development Orientations for the Promotion of Shade Coffee
vii.   Burns,R.(2000). Introduction to Research Methods (4th edition), French Forest NSW; Longman.
viii.   CBS (1979).Statistical abstracts: Central Bureau of Statistics, Nairobi. Coffee Board of Kenya (CBK) (1998).Market report, 1997.Nairobi.
ix.   CRF (1999).Strategies to enhance coffee production in Kenya. Coffee Research Foundation Food and Agriculture Organization (FAO). (2001). World Production Statistics. FAO Rome, pp:
x.   51-55.
xi.   Griffon,M and Guillaumont P (2004). Economics of Agricultural Policies in Developing Countries. Paris.
xii.   International Coffee Organization (ICO).(2004). Total Production of Exporting Countries International Trade Centre, Coffee: An Exporter's Guide. London, UK
xiii.   Karanja A.M ;(2002) Liberalisation and smallholder Agricultural Development: A case study of coffee farms in Kenya; PhD Thesis Wageningen University (2002)
xiv.   Karanja,A.M (1998).Effects of Liberalization measures undertaken in the coffee industry on Coffee production, quality and profitability in Kenya, Kenya coffee 63(743)
xv.   Karanja,A.M.(2001).Coffee Prices stabilization in Kenya as a policy option Agraval, Arun, and Krishna Gupta. (2005). Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. World Development 33 (7):1101-1114.
xvi.   Oksana Nagayets, "Small Farms: Current Status and Key Trends," presentation delivered at
xvii.   "The Future of Small Farms" workshop, IFPRI, Imperial College, and ODI, June 2005; and UN Population Division, World Urbanization Prospects: The 2009 Revision (New York: United Nations, 2010).
xviii.   Paul. 2006. "Raising the Bar: Producing Quality Coffee in Rwanda."
xix.   RIDLEY, FRANCES, VICTORIA, (2011) the past and future climatic suitability of Arabica Coffee in East Africa., Durham theses, Durham University.
xx.   Rwanda Ministry of Agriculture and Animal Husbandry and Ministry of Trade and Industry (2008). "National Coffee Strategy Rwanda 2009–2012.
xxi.   Rwanda Ministry of Finance and Economic Planning (2000). "Rwanda Vision 2020."
xxii.   Swanson, Richard, and Tom Bagaza (2008). "SPREAD-Growers First Coffee Cooperative
xxiii.   Assessment and Cooperative Development Work Plan." Report prepared for the Texas A&M University System, Borlaug Institute of Inter- national Agriculture and Growers First.
xxiv.   United Nations Population Division (2011), World Population Prospects: The 2010 Revision (New York: United Nations, 2011).
xxv.   United Nations (2011), the Millennium Development Goals Report 2011 (New York: United Nations, 2011).
xxvi.   USAID (U.S. Agency for International Development). 2009. "Rwanda."
xxvii.   Van Hoyweghen, Saskia. (1999). "The Urgency of Land and Agrarian Reform in Rwanda." African Affairs 98: 353–72. Verwimp, Philip. 2003. "The Political Economy of Coffee."
xxviii.   World Report Spring (2006): Specialty Coffee; Improved Market Linkages & Increased Profits.