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The Influence of Infrastructure Development on the Utilization of Markets in the Small Holder Market Access Program by Horticulture Micro Enterprises: A Case Study of Imenti South Sub County

Nicholas K. Njebi

MBA Graduate, African Nazarene University, Kenya

Agribusiness Subject Matter Specialist, Equity Bank Kenya Limited, Kenya

Dr. Grace W. Kiiru

Lecturer, Department of Business Administration, Kirinyaga University, Kenya

Abstract:

Agriculture underpins social economic development in Kenya. The rural economy of Kenya is driven by Agricultural micro enterprises where the small holder farmer plays a key role. Horticulture is currently the most profitable of all the Agriculture sub sectors in Kenya. The Government collaborates with development partners to develop this sub sector by designing and implementing various initiatives. Small Holder Market Access Program [SHoMAP] is such a collaboration between the Government of Kenya and International Fund for Agricultural Development (IFAD). This study investigated the influence of infrastructure development on the utilization of markets in the Small Holder Market Access Program by horticulture micro enterprises in Imenti South Sub County. The case studies were Nkubu and Miruriri SHoMAP markets in Imenti South Sub County. Analysis of the findings showed that infrastructure development influences utilization of markets in the Small Holder Market Access Program by horticulture micro enterprises. It was recommended that the effects of this factor be addressed to ensure optimal utilization of SHoMAP markets and all other markets serving small holder farmers' value chains. Further studies were recommended to understand the effect of devolution in agriculture project management.

Keywords: *Infrastructure Development, Utilization of Markets, SHoMAP Markets*

1. Introduction

It has been demonstrated worldwide by IFAD (2011) that market oriented agriculture has the capacity to generate incomes and support sustainable economic growth especially through the partnership of governments, private sector, civil society, NGOs, small holder farmers and their associations. The support enables small holders to invest in emerging high value horticultural crops hence increased productivity, improved incomes and better lives especially for children (IFAD, 2011). In Kenya, agriculture was devolved to the rural economy in the counties and it is an anchor sector of the social pillar in Kenya's long-term development blue-print, Vision 2030 (Kenya Vision 2030, 2017). Horticulture is the emergent sub-sector in agriculture. The Ministry of Agriculture [MOA] (2015) showed that in Kenya and especially Imenti South Sub County within Meru County, a favourable tropical and temperate climate supports growth of a wide range of horticultural crops. Horticultural Crops Development Authority [HCDA] (2013) identified the main market for Kenyan fresh horticultural produce as Europe, Saudi Arabia and South Africa. Data from the MOA (2015) indicated Kenya's horticulture production in the year 2014 was 200,000 tonnes and was worth over 80 Billion Kenya Shillings. Locally, a significant portion of horticultural produce output by small holders is traded in the local markets which are the open-air markets and the SHoMAP markets. Most of the open-air markets are not physically constructed. According to the MOA (2015) SHoMAP markets were initiatives implemented by the government of Kenya in collaboration with IFAD to facilitate horticulture trading activities. Despite their importance, Chan, Scott, and Chan (2004) identified a number of variables influencing the success of such project utilization as human-related factors, project-related factors, project procedures, project management actions, and the external environment. The HCDA (2013) further identified the following factors; poor and inadequate infrastructure in the rural areas with high productivity, limited post-harvest capacity, inaccessible agriculture finance models, and poor market linkages. The five-year Meru County Integrated Development Plan [CIDP] (2013-2017) identified major development challenges affecting various agricultural sub sectors as follows; Poor infrastructure development which hinders access to markets by traders and farmers. Poor state of feeder roads that serve the agricultural areas especially during the rainy seasons. Poor infrastructure increases the cost of transporting produce. Inaccessibility to markets for perishable products like horticulture and milk contributes to heavy losses for the farmers. Poor marketing systems where most agricultural commodities are sold in raw form lacking value

addition and contributing to low market prices. Poor market organization which leads to very low prices. And also, exploitation by middlemen which reduces investment in agriculture sub sectors, hence the inception of SHoMAP.

1.1. Small Holder Market Access Program (SHoMAP)

This intervention was implemented in Kenya to address market utilization by small holders. Implementation partners were International Fund for Agricultural Development [IFAD] and the Government of Kenya [GoK] as shown by the (MOA, 2015). IFAD (2014) stated the aims of SHoMAP were to improve farm productivity, incomes, health, supply of inputs, functioning of marketing chains and welfare of rural Kenyans; to invest in value chains and market infrastructure; and to build the capacity of private-sector service providers, Government institutions and farmers' organizations. The project was designed to meet requirements of small holder horticulture farmers. These according to MOA (2015) were to increase domestic horticulture productivity, improve the farm input and farm output marketing system. The targeted number of farmers expected to benefit from the programme were estimated to be over 60,000 in 12,000 smallholders' farm families to be reached through groups and individuals, as informed by (IFAD, 2014). The project period was 2007 – 2014 with a scope of 7 counties at a cost of 2.3 billion Ksh (MOA, 2015).

Besides SHoMAP other initiatives aimed at resolving market utilization challenges by horticulture small holder farmers in Kenya were described by MOA (2015) as follows: Smallholder Horticulture Empowerment and Promotion Unit Project (SHEP-UP) from 2010 to 2015 by Government of Kenya and JICA; Smallholder Horticulture Empowerment Promotion Project for Local and Up scaling (SHEPPLUS) from 2015 to 2020 by Government of Kenya and JICA; Small-scale Horticulture Development Project (SHDP) from 2008 to 2015 by Government of Kenya and Africa Development Bank. However, the success rate of their utilization has been wanting and it's against this background that this study sought to find out the influence of infrastructure development on the utilization of SHoMAP markets by horticulture micro enterprises.

1.2. Statement of the Problem

The problem being investigated in this study was the non-utilization of SHoMAP markets. This reality was informed by information from the SHoMAP Supervision Report by Republic of Kenya (2014) which showed that it was classified by International Fund for Agricultural Development "as a problem program" and that only four (4) markets out of twenty-nine (29) markets were in use while others were not such as Nkubu and Miruriri SHoMAP markets. The role infrastructure development had in influencing this problem of non-utilization of SHoMAP markets in Imenti South Sub County was investigated.

1.3. Objectives of the Study

- i. To analyse the role of infrastructure development on the utilization of SHoMAP markets by horticulture micro enterprises in Imenti South Sub County.

1.4. Research Questions

- ii. How infrastructure development influences the utilization of SHoMAP markets by horticulture micro enterprises in Imenti South Sub County?

1.5. Significance of the Study

This study was to benefit the following. The Government of Kenya and its donor partners in decision making and policy formulation on the utilization of markets for small holders in the horticulture subsector. It was to benefit value chain players in agriculture with information on factors that influence utilization of market facilities. It would be useful to schools, students and organizations interested in understanding the factors influencing utilization of markets by small holder micro enterprises. It would benefit scholars and research institutions investigating emerging issues in the agriculture sector with information on the utilization of horticulture market projects. It would be useful to scholars interested in furthering research on utilization of small holder horticulture markets. It would equip small holder communities with information enabling resolution of issues influencing their utilization of markets.

1.6. Conceptual Framework

The study was guided by the conceptual framework in the following Figure 1;

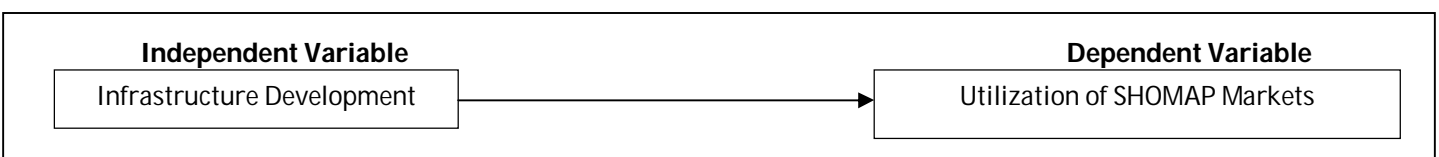


Figure 1: Conceptual Framework

2. Literature Review

Literature was reviewed on the theories that informed the conceptualization of this study. These were the theory of change and the stakeholder theory.

2.1. Empirical Review

Kiprono and Matsumoto (2014) observed that poor roads infrastructure lowered agricultural development in Africa because it increased the cost of conducting agriculture business and increased the cost of accessing markets for farm inputs and outputs. Competitive markets offered the rural economy participants access to farm inputs, an exchange platform for farm outputs, technological advancements, consumer goods, other assets, access to credit and labor. IFAD (2010) found that distance to markets and lack of roads affects rural communities in developing nations. Investing in road rehabilitation in Africa boosts the capacity of small holder farmers to increase productivity, increase incomes and reduce poverty.

However, in most unequal societies in the world such as Kenya, development follows political patronage. This view is supported by Burgess, Jedwab, Miguel, Morjaria, and Miquel (2013) where they found that roads have been traditionally constructed in areas perceived to be friendly to government or where a powerful government official hails from. All sectors of the economy benefit from the development and maintenance of infrastructure such as roads, telecommunications, and electricity because distances to inputs and output markets for all sectors are efficient. Research by Jouanjean (2013) showed that development of hard infrastructure facilitates the spatial integration of product and factor markets in both the agricultural and non-agricultural sectors. This will eventually catalyze more trading opportunities because of increased accessibility to the markets.

3. Research Design and Methodology

This study used the case study research design method. It was preferred because much research has not been done about the SHoMAP markets and thus not much is known about them. Secondly because the uniqueness of projects under the SHoMAP initiative required investigation in their particular natural context. The case study research design would inform the study on why the market projects under SHoMAP are un-utilized because success or failure of government programs and projects has direct and indirect consequences on the livelihoods of the society.

3.1. Target Population

The target population in this study included various participants in the small holder horticulture sub-sector of agriculture in Imenti South Sub County, the target population of 5,981 and was a mixture of all the intended beneficiaries of the SHoMAP markets constructed in Nkubu and Miruriri. The target population is displayed in Table 1 below.

Categories	Frequency
Micro traders	220
Small Holder Horticulture Farmers	5,700
SHoMAP market committees	30
Agriculture Professionals	31
Total	5,981

Table 1: Target Population

Source: Republic of Kenya, Department of Agriculture, Livestock and Fisheries, Directorate of Agriculture, Imenti South Sub County Agriculture Office (2017)

3.2. Sample Size

This was determined using Slovin's formula as follows; $n = N / (1 + N e^2)$. Where at 90% confidence level; the error tolerance is 0.10; and N is 5,981. On substituting the figures in the formula; $n = 5981 / (1 + 5981 (0.10)^2)$; $=5981/60.81$; $=98.35553$. Sample size, n hence was 98. The sampling size is described in Table 3.2 below.

Categories	Frequency	Sample
Micro traders	220	3
Small Holder Horticulture Farmers	5,700	93
SHoMAP market committees	30	1
Agriculture Professionals	31	1
Total	5,981	98

Table 2: Sampling Frame

Source: Researcher (2017)

3.3. Data Collection Procedures

Interview questions for Focus Group Discussion sessions were prepared. Questionnaires for traders and market committee were prepared. Three (3) questionnaires to collect data from traders, 93 questionnaires to collect data from individual small holder farmers, and 1 questionnaire for the SHoMAP market committees chair in Meru County; 1 key informant interview to collect data from the Sub County Agriculture Officer; 9 Focus Group Discussion Interviews to collect in-depth data from the small holder farmers; and the observation schedule where the researcher's natural eyes were used to observe the two 2 markets for trading activity.

4. Data Analysis and Presentation

Descriptive statistics utilized the statistical package for social sciences version 22. Data was displayed using prose, bar charts, pie charts, and graphs. It was presented using percentages, frequencies, means and standard deviations.

4.1. Data Analysis and Presentation of Findings

The objective of this study was to find out how Infrastructure development influenced utilization of SHoMAP markets by small holder farmers.

4.2. Influence of Infrastructural Development

The objective of this study was to establish the influence of infrastructure development on the utilization of SHoMAP markets. In interviews with small holder farmers, farmers were requested to indicate their level of agreement with the statement that 'the level of infrastructure development affected the use of this market' by indicating whether they 'totally agree', 'agree', 'disagree', 'totally disagree' or 'not sure'.

Their responses are summarized in Figure 2 presented as follows.

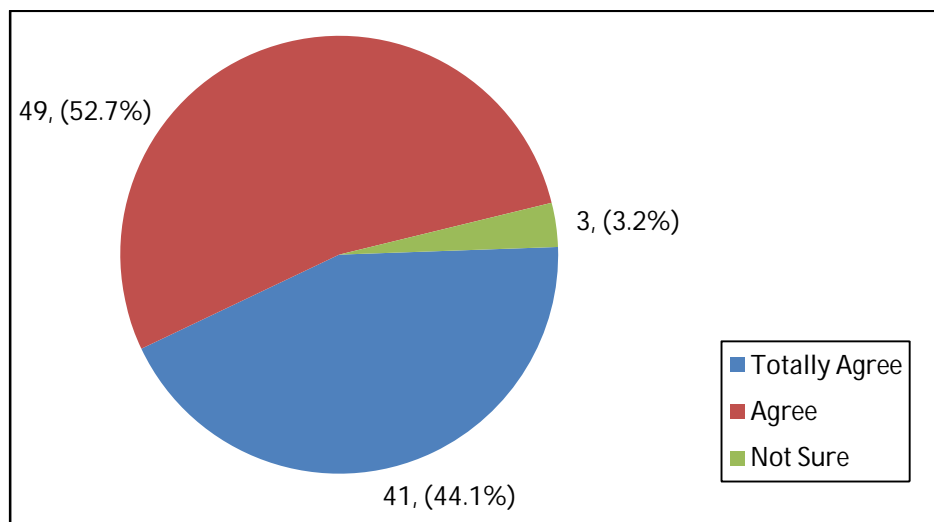


Figure 2: Farmers' Agreement with the Statement that the Level of Infrastructure Development Affected Utilization of the Markets
Source: Researcher (2017)

As Figure 2 above shows, only three farmers were unsure that level of infrastructure development affected use of the markets (3.2%) and all the others either agreed (52.7%) or totally agreed (44.1%). Thus, from the small holder farmers' point of view, the lack of infrastructure in the markets prevented them from using those markets. In focus group discussions with the farmers, they were able to elaborate on the state of infrastructure in the markets. They complained about poor access roads to the markets that became unusable when it rained. They also pointed out that water and electricity was not available therefore they found it difficult to operate in darkness and they were concerned about cleanliness. Farmers from the areas close to Miruriri market informed the researcher that some facilities in the market had been vandalized by local youths thus rendering them unusable. They also expressed concern over security of their goods if they were to store them in the market since there was no security system in place.

In their interviews, the chairman of the SHoMAP market committees in Meru County and the sub-county agriculture officer conceded that the poor infrastructure in the markets, especially in Miruriri, prevented the farmers from using them. The three traders surveyed indicated that they 'totally agreed' that the markets were not being used because of poor infrastructure development. The traders gave reasons that discouraged them from using the markets and some had to do with infrastructure. They explained that the stalls in the markets were too small to allow them operate optimally and were few in number. They also complained about the absence of water and electricity. The farmers' views on infrastructure were therefore corroborated by the traders.

The study found that the infrastructure provided in the two SHoMAP markets was inadequate. The poor infrastructure was a factor that hindered utilization of the markets. This finding aligns with previous research where quality of available infrastructure was found to influence farmers' utilization of markets for farm produce. For instance, Kiprono and Matsumoto (2014) reported that poor road infrastructure prevented farmers from taking their produce to markets. In focus group discussions, farmers indicated that transporting their produce to the Miruriri market was a challenge because of the bad roads.

5. Summary of Findings, Discussion, Conclusions and Recommendations

The objective in this study was to establish the influence of infrastructure development on utilization of SHoMAP markets by horticulture micro enterprises in Imenti South Sub County. More than 90% of the smallholder farmers were of the view that poor infrastructure hindered full utilization of the SHoMAP markets, a position shared with the traders, chairman of the SHoMAP market committees in Meru County and the sub-county agriculture officer. Poor access roads, lack of water and lack of electricity were the issues raised by farmers and traders. Traders also complained that the SHoMAP markets were small in size. The available stalls are few in number and not spacious.

Concerning this factor, the researcher was of the opinion that the inadequate size of the market in terms of trading space contributes to lack of utilization. The beneficiaries are more than the available stalls. The inadequacy of enabling infrastructure such as all-weather access roads, security, toilets, water and electricity were also contributors to the problem of underutilization. These findings agree with previous research efforts by Burgess et al. (2013), IFAD (2010), Jouanjean (2013), and Kiprono and Matsumoto (2014) where they found that development of adequate infrastructure contributed to access to, utilization and growth of competitive agriculture produce inputs and outputs market systems.

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