

**AN ANALYSIS OF THE ROLE OF PERIODIC MARKETS IN RURAL
DEVELOPMENT IN MUKAA SUB-COUNTY; MAKUENI COUNTY**

BY

KITHUKA DANIEL MUOKI

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award of Master of Arts degree in Economic Geography at the Department of
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DECLARATION

This is my original work and has not been presented to University of Nairobi or any University for the award of degree or any other academic award.

Signature:

Date:

Kithuka Daniel Muoki

C50/8522/2017

This research project has been submitted for examination with our approval as University of Nairobi Supervisor(s):

Signature:

Date:

Professor Evaristus M. Irandu

Department of Geography and Environmental studies

University of Nairobi

Signature:

Date:

Dr. James M. Moronge

Department of Geography and Environmental Studies

University of Nairobi

DEDICATION

I dedicate this work to my lovely Mom Agnes and in loving memory of my late dad Samuel Kithuka and my siblings James, David, Tom, Sospeter and Irene. *“Cross the river in a crowd and the crocodile won’t eat you”*.

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ACRONYMS AND ABBREVIATIONS

SSA	Sub Saharan Africa
SDGs	Sustainable Development Goals
CBD	Community Based Development
SD	Sustainable Development
CPT	Central Place Theory
NGO	Non-Governmental Organization
CIDP	County Integrated Development Plan
KNBS	Kenya National Bureau of Statistics

ABSTRACT

The spatio-temporal pattern of periodic markets determines the pattern of infrastructure in rural areas of developing countries. Rural residents are constantly transforming their lifestyles and hardly do they depend on agriculture alone. Periodic markets in rural areas have also transformed to meet the needs of rural residents. This is evidenced by the constant change in the nature of goods sold in these markets. However, rural underdevelopment remains a challenge. The need to address rural underdevelopment by focusing on the changing nature of commodities traded in periodic markets, poverty eradication, access to health facilities and constraints to marketing are the gaps filled by this study to generate knowledge.

This study analyzed the role of periodic markets in rural development in Mukaa Sub County. Four specific objectives were stated. (1) To analyze the relationship between transport cost and trading behaviour, (2) To examine employment opportunities in periodic markets, (3) To discuss the types of manufactured goods accessed in rural periodic markets and (4) To establish the difference between spatial pattern of periodic markets and access to health care facilities.

Primary data were collected through questionnaire surveys and in-depth interviews. The study targeted traders and shoppers in seven periodic markets. A sample of 28 traders selected purposively and a sample of 112 shoppers who were randomly sampled provided primary data. Collected data were analyzed using descriptive statistics, simple linear regression analysis and Pearson's correlation analysis. The null hypothesis was tested using Chi square (χ^2) test.

The findings of the study revealed that there is a strong negative relationship between transport cost and the rate of trader attendance in periodic markets. Pearson's correlation coefficient was computed as -0.825. Major employment opportunities generated by periodic markets were found

to be trading, transport and casual works during market days. The findings, therefore, revealed that periodic markets contribute over 5% in poverty eradication in Mukaa Sub-County. The study found out that rural residents rely on periodic markets for the purchase of clothes, mobile phones, solar panels, farm inputs, and manufactured goods for domestic use. According to the findings, there is no significant difference between the distribution of periodic markets in space and access to health care facilities. The study, therefore, recommended that the county government should make efforts to match the location of social facilities with the spatial pattern of periodic markets. It also recommended the county government to put intense efforts to train traders, subsidize the cost of transport and provide credit facilities to traders in periodic markets.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Exchange of goods and services is a defining feature of humanity (Desai, 2013). The physical exchange takes place in designated places and time. This leads to the establishment of markets. A common type of market is the periodic market which is the focus of this study. According to Bromley (1987), periodic marketing involves a meeting of buyers and sellers at a specific place at regular intervals. In developing countries, these markets have been associated with agriculture, transportation and industrialization (Mulimani, 2012). Several theories underpin the origin of periodic markets. Berry (1967) suggests that periodic markets may have developed from the barter system of trade. Hodder (1968) on the other hand views the concept of periodic marketing from the angle of local specialization that necessitates exchange. Wanmali (1980) and Okosun (2016) attach no force to the existence of periodic markets and say that they just shoot up.

Other scholars like Abimbola (2012) suggest that periodic markets grew from external forces associated with trade routes while others argue that they are products of other social, cultural and religious events that bring people together and traders and buyers take advantage of such gatherings to carry out marketing. Based on the meaning of rural periodic markets as defined by Hodder (1968) and Bromley (1987), the volume of trade in these markets is dependent on access to the markets and the level of rural production (Mulimani, 2012). Paradoxically, rural production may also be dependent on the volume of trade (Abimbola, 2012). Therefore, for these two aspects (periodic marketing and rural production) to grow simultaneously, accessibility is key.

In developing countries where a large percentage of the populations still live in rural areas and are peasants, rural markets become part of them and defines their culture (Skinner, 1964; Wanmali, 1980). Adequate periodic marketing may, therefore, be a prerequisite for social, economic and cultural transformation in these regions (Mandal, 2006; Abimbola, 2012). It is in these markets where rural residents with limited mobility to urban areas get a chance to interact with and buy manufactured products from urban traders (Angmor, 2012). According to Obudho (1983), the interaction of urban and rural cultures in periodic markets is key in enhancing the process of urban dual economics. These markets form important endpoints for manufactured goods and start points for the flow of primary products especially from agriculture towards the major urban centres (Wanmali, 1980; Mohammad, 2009; Desai, 2013; Ndumbaro, 2017). Tacoli (2004) calls this phenomenon “the rural-urban linkage”.

Mukaa Sub-County has had periodic markets for a long time since independence. Most of the goods traded were agricultural products and home-based cottage industry products like ropes, pots and “kyondos” (baskets). Periodic marketing was limited by access and the main means of transport was walking. Later on in the 1990s bicycles and pickups (small trucks) became major means of transport and later the matatus (minibus) opened up more access to the markets. This increased the number of participants in these markets. In modern days, the use of motorcycles has enhanced more access to periodic markets.

What is clearly notable in these markets today is the changing nature of the commodities traded especially the manufactured products. Products from the jua kali sector and simple electronics are common features of modern periodic markets in rural areas. This may imply a transformation in the lifestyle of rural residents. This study sheds light on the potential embedded in periodic markets for development to address the gap left out by previous scholars who generally focused

on rural production particularly the agricultural sector. This study aims to analyze the extent to which rural development is and can be enhanced by the existence of periodic markets with a keen interest in the change of goods traded in these markets social facilities and constraints to marketing.

1.2 Statement of the research problem

Socio-economic development in many rural areas of developing countries is anchored in periodic markets (Park, 1981; Khan and Ali, 1998). Rural residents make multi-purpose trips to periodic markets since they can access a variety of functions in one market day (Bromley et al., 1976). The spatial and temporal pattern of periodic markets may serve as a guide for the provision of public utilities to rural populations (Rambanapassi, 1997). According to Kio-Lawson et al., (2015), periodic markets enhance convergence of various forms of infrastructure leading to modernization of rural areas.

Studies to link periodic marketing and rural development have been done by various scholars (Hodder, 1961; Bromley et al., 1976; Ghosh, 1981; Obudho, 1983; Mohammad, 2009; Abimbola, 2012; Kio-Lawson et al., 2015). Most of these studies focus on the Spatio-temporal characteristics and functions of periodic markets. It also emphasizes on agriculture and the cottage industry (Riddell, 1974; Smith, 1979; Park, 1980; Wanmali, 1981)

However, as observed by various scholars (Rozelle et al., 2003; Tacoli, 2004; Abimbola, 2012; Mulimani, 2012) periodic markets today are characterized by a gradual change in the commodities traded. Similarly, rural residents are constantly transforming their lifestyles and hardly do they depend on one primary income-generating activity (Tacoli, 2004). In 2017, only

52% of the households in Sub-Saharan Africa depended on income from agriculture (Davis et, al., 2017). Besides, Ploeg et, al., (2000) noted that rural development is multi-faceted and cannot be addressed adequately by focusing on agriculture alone.

The gradual change of the commodities traded in periodic markets, the transforming lifestyle of rural residents and the need to address rural underdevelopment is the gap filled by this study. The study was motivated by Sustainable development Goals (SDGs) (1) Poverty eradication, (3) good health and wellbeing of the people, (8) decent work and economic growth and (10) reducing inequalities. Therefore, this study examines and analyses critically the opportunities and challenges for rural development through periodic markets and the constraints to marketing in rural areas. The aim of this study is to generate knowledge.

1.3 Research questions

This study was motivated by the following research questions

1. How does the spatial and temporal pattern of periodic markets in Mukaa Sub County affect the rate of trader participation in periodic markets?
2. How can periodic markets in Mukaa Sub County be used to alleviate poverty?
3. What types of manufactured goods are accessed in rural periodic markets?
4. What is the difference between the spatial distribution of periodic markets and access to health care facilities in rural areas?

1.4 Objectives of the study

The general objective:

To analyze the role of periodic markets in developing the rural economy through provision of goods, services and opportunities for development

Specific objectives

1. To analyze the effect of transport cost on the rate of trader participation in periodic markets in Mukaa Sub County.
2. To examine the employment opportunities in periodic markets that can be used to alleviate poverty in Mukaa Sub County.
3. To discuss the types of manufactured goods accessed in rural periodic markets in Mukaa Sub County.
4. To establish the difference between the spatial distribution of periodic markets and access to health care facilities by rural residents in Mukaa Sub County.

1.5 Research Hypothesis

1. Ho: There is no significant difference between the spatial distribution of periodic markets and access to health care facilities by rural residents.

H1: There is a significant difference between the spatial distribution of periodic markets and access to health care facilities.

1. 6 Justification of the study

Periodic markets in Kenya offer various functions not found in urban areas (Obudho, 1983). Some functions as stated by Good (1981) – bicycle and shoe repair, livestock trade and intercommunity socialization can only be carried out adequately in rural periodic markets. Abimbola (2012) views markets as meeting points for women where they perpetrate their lineage rights. All in all, the core function of periodic markets remains economic. According to Hodder (1965), Obudho (1983) and Angmor (2012), these markets enhance disposal of local surplus produce and distribution of imported products.

Taylor (1968), Bromley (1987) and Mulimani (2006) all agree that the growth of most small and medium urban centres was preceded accompanied and are sustained by the mercies of periodic marketing without which they either remain stagnated or fail. Angmor (2012) stated the example of Bisa and Manambo city of Indonesia. Also, Hodder (1965) noted that many of the towns in Somalia developed from marketing villages. The growth of these towns is attributed to the pulling effect of markets held in their current locations. The number of functions provided in most fixed towns depends on a periodic market held on a particular day in the town. This is not an exemption in the study area. According to Ghosh (1981), participation of a trader in different periodic markets is determined by the cost of moving from one market to the next held in different temporal and spatial distances. He concluded that maximum participation can be enhanced by a sequential pattern of periodic markets in time and space.

Most of the studies done on periodic marketing in Kenya and other countries have focused on the Spatio-temporal characteristics of these markets. Ghosh (1981) and Abimbola (2012) focused on modeling the operations and the characteristics of periodic marketing. Hodder (1961), Bromley

(1976) and Obudho (1983) went ahead and studied not only the characteristics but also the origin and functions of markets but in general. Obudho focused on both fixed and periodic markets in rural and urban areas. Tacoli (2004) shed more light by studying the link between markets (fixed and periodic) and urban areas. Wanamali (1981) Park (1981) and Mulimani (2012) initiated studies on the role of periodic markets in rural development in India and Korea respectively. However, most of these studies focused on agriculture and products from the cottage industry.

It is evident that little documentation has been done on the role of rural periodic markets in rural development with a focus on manufactured goods and the provision of socio-economic services. This is both in Kenya at large and the study area (Mukaa sub-county). Historically, as noted by Obudho (1983), the community in the study area is known to have engaged in inter-regional trade with the Swahili people, hence a trading culture.

Therefore, the significance of this study is to generate knowledge on the opportunities, potentials and the contribution of periodic markets to rural development. The findings of the study aid in drawing conclusions useful to spatial planners on site selection for new markets and socio-economic facilities in order to achieve optimum utilization as suggested by Taylor (1968). The study address development from below hence Community Based Development (CBD). This enables policymakers in formulation of favourable policies that embrace economic development and social equity without compromising the environment hence sustainable development (SD). Lastly, the study is a key source of knowledge for researchers who would wish to carry out further research in the field and related disciplines.

1.7 Scope and limits of the study

This study was carried out within the boundaries of Mukaa Sub-county. Periodic markets in a market cycle of one week were visited for data collection. In addition, one market (Nunguni) that is outside Mukaa Sub-County but influences the flow of marketing in the study area was included in the study. Primary data were collected from traders and their customers. Traders were sampled in a purposive manner depending on the goods and services they offer. The categories of interest included simple electronics, consumer manufactured goods, kitchenware and clothes.

Published works were relied upon for secondary data. Data on employment focused on traders, casual labourers and market officials. The main social service was access to health care facilities. Lastly, the study focused on traders who participate in more than one market in a cycle of one week intending to establish the Spatio-temporal synchronization of markets and its effects on market attendance.

1.8 Operational definition of terms

Periodic market: An authorized public gathering of buyers and sellers in a specific place at regular intervals (Hodder, 1965)

Rural development: A general and continuous improvement in the welfare of rural populations through establishment and provision of socio-economic structures for service delivery to rural producers and residents (Kenny, 2003)

Periodic marketing: Physical transaction of goods and services at a given time, specific place and pricing system (Ehinmowo and Ibitoye, 2010)

Market cycle: The number of days between a market day and the next market day in one market centre usually one week (seven days).

Infrastructure: Physical structures and services that enhance human wellbeing and aid production and distribution of goods and services

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, literature of works related to this study is critically reviewed. The literature is divided into two sections. One is theoretical perspectives that explain the connection between markets and rural development, origin and operations of periodic markets. The relevance of the theories to this study is also discussed. The other section reviews empirical studies on periodic markets and rural development at a global scale, regional scale and at the national level.

The literature is reviewed to find out what has been done on the role of periodic markets and rural development. This aids in finding knowledge gaps addressed by this study as well as avoiding unnecessary duplication of previous research works. Literature is also reviewed to link previous studies with this study.

2.1.0 Theoretical Framework

The major theory which this study is based on is the Growth Centre Theory. This theory is adopted for this study since the study views periodic markets as growth centres that trigger development in rural areas. Growth centre theory is used to show the connection between periodic marketing in rural areas and development. In addition, the endogenous and exogenous theories are reviewed to aid in understanding the origin of periodic markets. Lastly, Christaller's

Central Place Theory (CPT) is used to explain the operations of periodic markets. These theories form the theoretical framework for the study.

2.1.1 Growth Centre theory

This theory or group of theories as pioneered by Francois Perroux in 1955 suggests that growth and development does not occur everywhere at once. It instead occurs at specific points and spreads outwards in different channels. Perroux referred to these points as growth poles. They are centres from which centrifugal forces emanate and to which centripetal forces converge. The forces talked of by Perroux are economic. The growth poles then have specific spheres where their influence is felt. The spheres are interconnected into an entire economic system for development. He defines a growth centre as a complex of activities which complement each other technically and economically in space.

A defining feature of growth centres is agglomeration of activities from which ideas diffuse and to which labour and capital flows. Perroux emphasized that a growth pole should be economically active with a leading industry and a propulsive industry. Such industries are characterized by high technology, managerial expertise, high demand, and high linkage with other related industries and are fast-growing industries with high capacity to innovate. Myrdal (1957) in his model (Circular cumulative causation model) suggested that growth centres should be attractive for further development. His concept of backwash effect is what Hirschmann (1958) later referred to as polarized effect. He argued that growth will not only remain at the growth centre but also trickle down to the hinterland. Increased income generation in the hinterland will

in turn, be used in the growth centre hence development. However, these scholars didn't account for the geographical space.

Boudeville (1966) in an attempt to address spatial gaps in the theory, he modified it and defined a growth pole as a set of expanding industries located in an urban area and which influence the economic activities in a region. He suggested that growth takes place within the context of geographical region, inter-linkages and linkages between human settlements and economic activities, and a specifically delimited region. A more refined version is the core-periphery model which was developed by Friedmann (1966). He suggested that urban centres regardless of their size tend to control the rural areas around them. The peripheral areas are characterized by underdevelopment indicated by high illiteracy, subsistence farming, poor health, malnutrition and high infant mortality rates. In contrast, the core has manufacturing industries, educational institutions, health care facilities and financial power.

According to Parr (1999), the growth centre theory and its modifications is usually applied deliberately to enhance development in a region. Komarovski (2013) states that a growth pole should possess unique characteristics that distinguish it from other places. It should have the potential for economic growth and dissemination of development to the surrounding areas. He adds that a modern growth centre should be one at the local level with richness of resources and conditions for investment and development. Komarovski recommends that the growth pole theory should be applied for specific purposes aiming at using the available and potential resources of a growth centre optimally.

2.1.2 Relevance of Growth Centre theory to the study

The link between economic infrastructure, social infrastructure and periodic marketing leads to transformation of small fixed rural central places into growth centres characterized by better welfare in health, education and nutrition as well as elements of urban nature like banking and telecommunication (Kio-Lawson et, al., 2015). As suggested by Perroux (1955), development occurs at one point and then spreads out to the hinterland. Initial infrastructures, social facilities and administrative units recommended by Bromley et. al., (1976) for periodic marketing attracts more economic activity which in turn attracts labour and other service industries.

Periodic market centers attract rural population from the surrounding. Mundal (2006) in his study of periodic markets in Nepal concluded that periodic markets serve as lowest central places in the entire hierarchy of urban centres and their role in urbanization and national development is beyond doubt. According to Abimbola (2012) and Kio-Lawson et. al., (2015), periodic markets are the channels through which the rural population enjoy some elements of urban life. Kumar (2017) argues that the road infrastructure established to mesh the periodic markets enhances social inclusion, accessibility, a wide variety of goods, access to information and other services which lead to a productive socio-economic life.

According to Richa (2011), periodic markets enables a chain effect by linking the surrounding areas with road infrastructure and provide a conducive environment for the convergence of economic activities accompanied by aids to trade like banking, storage and telecommunication. Eighmy (1972) and Abimbola (2012) independently pointed out that the link between periodic markets and urban centres through transport networks enable diffusion of technological innovations down the urban hierarchy. A successful periodic market will always attract fixed

facilities for service provision leading to an integrated rural center that meets the demand of the rural population (Abimbola, 2012).

Therefore, the growth centre theory is adopted for this study since the study analyses the extent to which rural residents in the hinterland of periodic markets access and experience development impacts as generated by periodic markets. The markets are viewed as the growth centres.

2.1.3 Endogenous theory

This theory attempts to give an account of the genesis of periodic markets. It is based on the barter system of trade. It argues that periodic markets originate from forces within the society. Internal need for exchange between producers and consumers lead to periodic marketing (Bromley et, al., 1975). According to the theory, local forces of demand and supply give birth to periodic markets. The forces emanate from local specialization and division of labour. The theory is famously known as the orthodox school of thought. It can be traced from Adam Smith's "Wealth of Nations" (Ambakederemo and Kalu, 2018).

Under this theory, the individual's rate of participation in the market is a function of the need for local exchange and division of labour. Gradually, confidence builds up leading to market places which later attract outside traders and consumers.

2.1.4 Exogenous theory

Unlike the endogenous theory, this alternative school of thought argues that periodic markets originated from external relations. Its view is that local demand is not enough to create market places (Ambakederemo and Kalu, 2018). The external relations emphasized by this theory are outside traders who stimulate local markets by bringing in goods which are unavailable in the local setting. The theory attaches much weight to long distance trading and trade routes. The baseline is that different societies economically complement each other hence need for exchange (Bromley et, al., 1975). It is the view of Polanyi (1946) as cited in Muhammad (2009) that external affairs involving different communities are the sources of trade. Alao (1988) points out that market participants are both locals and outsiders.

Hodder (1965) supported this theory that the development of trade routes but not local exchange is the origin of periodic markets. He argued that the spatial pattern of periodic markets is a response to the trans-regional trade routes rather than in agreement with human settlement. Actually, it is the markets that attract human settlements (Jackson, 1971). In addition to long distance trading, government intervention may be an external stimulus to the origin of periodic markets (Abimbola, 2012). An example where periodic markets started as a result of government policy is in Zimbabwe (Rambanapassi, 1997). This was adopted to address regional disparities caused by the colonial government.

Unlike the orthodox view that looks at specialization and division of labour at the individual level, this theory argues that division of labour is between communities or ecological regions which complement each other leading to trade (Hodder, 1965). Market places therefore, develop along the trade routes.

2.1.5 Relevance of endogenous and exogenous theories to the study

Periodic markets are structures for social and economic interactions. The distribution of rural periodic markets in space is therefore, a response to an economic need stimulated by either a surplus or deficit. Periodic markets are convenient meeting points for both the seller and the buyer. The two theories are useful in examining the origin of markets and also the prediction of market operations with a change in the distribution of physical infrastructure in the study area.

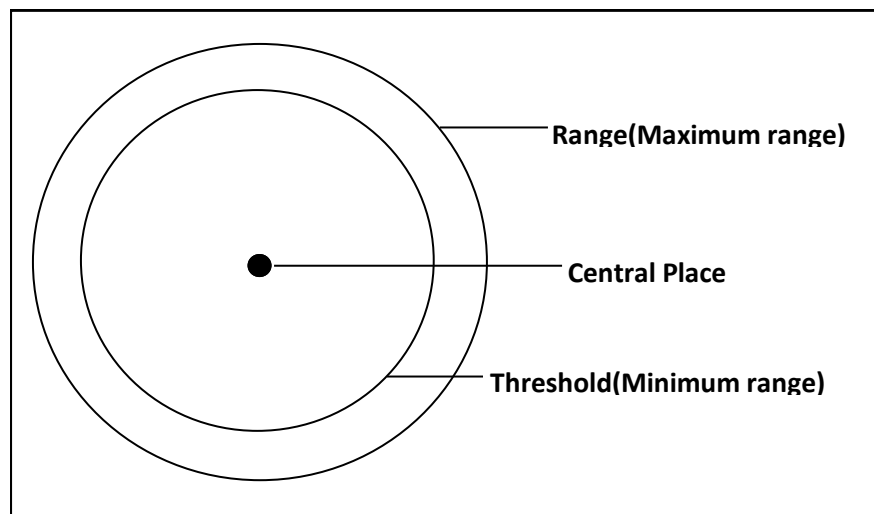
It is a common observation in the study area that most of the periodic markets are located along the major roads and railway line. This may imply that the markets have originated from the trade routes as suggested by exogenous theory. In this study, the theory is adopted to suggest the origin of periodic markets in the study area.

The theories are also applied to prospect the location of new markets in the study area. Under these theories, it is easier to assess the suitability of sites for new markets. The exogenous theory that attaches the origin and operations of periodic markets to external forces and trade routes helps in analyzing the flow of manufactured goods to rural areas. The endogenous theory is relevant in assessing local specialization and economic diversification by rural residents.

2.1.6 Relationship between Central Place Theory (CPT) and periodic marketing

Since its inception in 1933, the central place theory by Walter Christaller has been applied, tested and modified to address academic needs. Scholars in the field of Marketing Geography have not been left out and a number of them have attempted to relate the theory with periodic markets.

Stine (1962) pioneered such studies in Korea by examining the effect of the minimum and maximum range of a good and how the two ranges lead to mobile marketing. According to Christaller, the maximum range(R) of a good is the distance from the central place at which the consumer's income is fully used on transport making the consumer unable to travel to the market to purchase a good. On the other hand, the threshold/minimum range(r) of a good is the minimum demand required to sustain profitable sale of a good at a fixed central place.



Source: Researcher (2019)

Figure 2.1 Minimum and maximum range of a good

According to Stine (1964) in Webber and Symanski (1973), if the range of a good is greater than or equal to the threshold then the firm will survive as fixed. On the other hand, if the threshold of a good is greater than its range, the trader will either surrender business or choose to be mobile (Hay, 1977; Ghosh, 1981; Ehinmowo and Ibitoye, 2010). According to Berry (1967), trading periodically accumulates demand hence expanding the threshold. It also reduces consumer transport costs and consequently increasing the range. In connection to this, Bromley (1975) stated that inadequate demand and friction of distance (Skinner, 1964) limits the provision of fixed central services in rural areas.

Ehinmowo and Ibitoye (2010) adds that an increase in the rate of mobile trading widens the difference between the range and the threshold of a good. These two authors point out that periodic marketing is efficient to the consumer since it saves him the cost of transport as he decides to submit to temporal distance. This implies that the consumer can buy more goods with the same disposable income than if he was to travel to a fixed central place.

Christaller's theory views cities as points that serve an area larger than themselves. Similarly, Richa (2011) notes that a periodic market provide several functions to a population larger than itself. Notable functions associated with urban centres as discussed by Christaller include value addition, exchange function and administrative functions. Periodic markets therefore in their spatial and temporal variations tend to help achieve equilibrium between demand and supply by linking areas of surplus with areas of deficit (Eighmy, 1972).

2.2.0 Empirical literature

Literature availed by published research works by scholars is reviewed. This literature relates periodic markets and various aspects of socio-economic development.

2.2.1 Periodic markets and rural development

The link between periodic marketing and rural development in developing countries has been researched widely. The literature is reviewed on global, regional and national levels. This is done in order to compare this study with other studies to fill knowledge gaps in the field.

2.2.1.0 Global literature

Periodic markets play a vital and pivotal role in the development of rural areas in developing countries (Mundal, 2006). Rural backwardness can be attributed to various factors which may be geographical, historical or simply human (Ndumbo, 2017). This usually causes regional disparities with rural areas often on the disadvantaged end. Various strategies have been adopted to address these disparities but few have proved effective. According to Rambanapassi (1997), it is until the strategy of deliberately establishing rural periodic markets was adopted that socio-economic development in rural Zimbabwe began. He points out that the markets helped to partially bridge the gap created by the colonial governments who concentrated only on the productive lands leaving other areas underdeveloped. Actually, this was the reason behind their establishment.

Comprehensive studies have been done in China, Korea and India. This is documented in the works of Wanmali (1981), Park (1981) Rozelle et, al., (2003) and Mohammad (2009). Skinner (1964) noted the unique features of periodic markets and how they relate to the social structure in rural China. He stated that periodic markets initiated modernization in rural China by transforming the traditional agrarian societies into modern industrial societies. He recognized the role of periodic markets as sources of manufactured goods and outlets for rural produce.

According to Skinner rural markets are the start points for upward movement of agricultural produce and craft items. On the other hand, these markets are the endpoints for the downward flow of manufactured goods from urban centres hence rural-urban linkage. Park (1981) in his study of periodic markets in Korea stated that this two-way flow of goods between farmers and urban traders is the back born of the rural economy in Korea. Skinner (1964), and Bromley

(1975) independently noted that market periodicity benefits traders since they can optimize production and sales efficiently. This is because most of the traders are part-time and engage in other activities during the market- less days. For example, a trader may choose to visit only two markets in a cycle and use the other days to produce more goods. Similar findings were made by Park in 1981

Skinner (1964) brought in the factor of transport. He argued that the poor state of transport network plays a role in periodicity of markets. In terms of financial functions, he observed that some traders extended credit facilities to customers and other traders as well as lending money. Men are also employed to provide transport services during market days. In addition, Skinner noted that market centres are essential meeting places where service providers like barbers and blacksmiths meet their clients and sign contracts which would be executed in a future date.

Rozelle et. al., (2003) attempted to describe how periodic markets in rural China operate. They pointed out that most of the markets are self-regulated. According to these authors, construction of market stalls by village and township leaders attracts sellers leading to increased economic activity. In their survey, Rozelle et. al.,(2003) agreed with Skinner (1964) that periodicity of markets is a function of insufficient demand to support fixed shops as explained by Christaller's range and threshold of a good in 1933 and supported by Bromley (1975). Rozelle and others also reviewed the role of periodic marketplaces in the forward and backward rural-urban linkage. Skinner and Rozelle in their respective studies pointed out that improvement in transport connectivity increases participation in markets since it reduces the friction of distance. Rozelle observed that apart from agricultural products, traders sold manufactured items like toothbrush and toothpaste, rat poison, cockroach spray, soap, hairbrushes, small mirrors and paper products.

Just like in Uganda, (Ssabavuma, 2008) farmers in China rely on periodic markets for farm inputs and construction materials (Rozelle et. al., 2003). The survey by Rozelle and others revealed that many of the traders prefer periodic markets to fixed shops to avoid expenses associated with fixed trading. Park (1981) adds that small scale merchants compete favourably with their large scale counterparts in urban areas by trading in periodic markets. Expenses incurred by fixed traders and avoided by mobile traders include tax and rent. Most of the traders also prefer mobile trading due to the relatively little capital associated with it.

Comprehensive studies by Wanmali (1980) and Mohammad (2009) sheds more light on the role played by periodic markets in development in rural India. Wanmali compared periodic markets with fixed regulated markets and concluded that rural farmers are best served by a periodic market than a fixed market. According to him, the periodicity of markets allows the traders and consumers ample time to prepare for demand and supply of goods in the hinterland (Wanmali, 1978). He agreed with Hay and Smith (1980) that periodic markets provide a variety of goods and services hence widening the consumers' choice. Skinner (1964), Wanmali (1980) and Rozelle et. al., (2003) all conclude that road connectivity influence the rate of market participation. Wanmali found out that the lack of an all-weather road to connect two markets in India (Khali and Gondkhairi) forced traders to avoid visiting the markets.

Khan and Ali (1998) in their study in Gonda district (India) established somehow similar findings as those of Wanmali (1980) that the Spatio-temporal system of rural periodic markets is the basic economic system that links not only rural producers and consumers but also the rural economy to the urban system in developing countries. Khan and Ali, Skinner (1964), Good (1975), Rozelle et. al., (2003) and Ssabavuma (2008) arrive at the same conclusion that periodic markets are sources of farm inputs, raw materials for home-based industries, goods and services

and employment hence their role in bringing development in rural areas cannot be overemphasized.

The flow of goods from rural areas to urban areas in one direction and the flow of manufactured goods towards the opposite direction strengthen the city-countryside link hence notable socio-economic transformation of rural India (Khan and Ali, 1998). Similarly, the flow of money to farmers transforms their housing and other basic needs hence poverty reduction. Khan and Ali also observed a decline in the rate of rural-urban migration thanks to the non-farm employment provided by periodic markets. They recommended an improvement in transportation to establish a functional system connecting periodic markets, rural farmers, small scale manufacturers and urban centres in order to address the challenge of rural backwardness in India. Kumar (2017) noted that markets in the Ranchi city of India are in a linear pattern with the transport network.

Mohammad (2009) also assessed the role of periodic markets in socio-economic transformation of rural India. He considered them as essential points of diffusion of innovations and ideas. According to him, these markets are start points and endpoints of the long channel that supports agribusiness. The horizontal and vertical exchange in periodic markets leads to economic expansion (Scott, 1972). Mohammad related periodic market centres with the growth centre model of Perroux (1955) and agreed with Perroux that socio-economic development forces spread outwards from the market centres to the hinterland. In terms of social services, he observed that the government organizes training camps and mobile clinics in periodic markets. Rural residents also access health facilities, water and modern energy from these markets.

Park (1981) discussed rural development in Korea with specific reference to the role of periodic markets. He observed that traders acquired employment in transport and storage. He also agreed

with Skinner (1964) and Wanmali (1980) that periodic markets are centres for dissemination of manufactured goods. Women also relied on the markets to exchange seasonal produce of fruits and get the local news and gossip.

2.2.1.1 Studies in Africa

Most of the studies in Africa are done in West Africa particularly in Nigeria, Ghana, Morocco and Sierra Leone. A study by Angmor (2012) in Ghana revealed the role played by rural markets in rural development. He agreed with Hodder (1965) and Obudho (1983) that local markets are essential points for disposal of agricultural products and acquisition of manufactured goods. He also pointed out that the markets in Ghana ended up to be the termini for road network in rural Ghana which led to a connection between the communities and the central places. This phenomenon is also observed in Nigeria by Eighmy (1972) and Kio Lawson et. al., (2015). Revenues and profits ploughed back are used in upgrading the markets and community development. In terms of employment, Angmor identified that markets are central places for employment to traders, transport operators, waste management companies and financial service providers. According to his survey, social facilities available in periodic markets include but not limited to educational institutions, health care facilities, administration and water supply.

Scott (1972) attempted to link periodic markets, farmers and villages in rural Nigeria. He showed the role played by periodic markets in connecting the rural residents to the national economy. According to him, these markets are essential for social events, economic transactions and political influence. They are the sources of information that guide decision making for the provision of goods and services. A study by Abdulraheem (2015) revealed the need for

sequential organization of periodic markets in space and time to maximize market participation. He also emphasized the need for transport network for proper marketing. According to him, the spatial economic system of rural communities is knitted together by periodic marketplaces. It is the physical and temporal distribution of these markets that define the pattern of flow of goods, sellers, buyers and service providers in rural economies.

Abdulraheem notes that not only being centres for community residents to interact socially and economically, these markets provide an avenue for urban traders to sell manufactured goods and obtain agricultural products as well as the acquisition of employment opportunities. Ambakederemo and Kalu (2018) argue that periodic markets are sources of raw materials for export hence economic diversification in Nigeria.

Periodic markets are the basic structures to initiate development by linking socio-economic processes and their beneficiaries (Bromley, 1976). This way they enhance development from below (Park, 1981; Kio-Lawson et. al., 2015). A clear understanding of the Spatio-temporal distribution of periodic markets can be an effective tool to guide the provision of public utilities (Rambanapassi, 1997). According to Eighmy (1972) in his study of periodic markets in Nigeria, the extension of road network is directly related to the extent of periodic marketing system. Rogerson (1997) while studying periodic markets in South Africa observed that in the 1970s, periodic marketing occurred in places which already had fixed shops selling manufactured products. Bromley (1976) recommended that new sites for periodic markets should be those with already established fixed facilities providing essential services.

Porter (2017) cast the net wider and studied periodic markets in Africa and how they grow and change into permanent markets and even supermarkets. He observed that one of the factors that

cause change or establishment of new periodic markets in Ghana and Nigeria is the development of road transport. Abimbola (2012) concluded that periodic markets thrived along access roads or nodal places where people meet for a variety of functions including meeting their marketing needs. According to Abua et. al., (2013), the distribution and interrelationship of economic systems in rural areas of the Cross River State of Nigeria is correlated with the Spatio-temporal distribution of periodic markets.

It is therefore clear that infrastructures for rural development are mostly embedded in the entire system of periodic marketing activities. Such facilities for provision of basic services in rural areas thrive well within periodic market centres and as Taylor (1968) states, failure to incorporate these facilities with periodic markets poses a risk of inefficiency and underutilization. Kio-Lawson et. al., (2015) confirmed this in their study of periodic markets in the Rivers State of Nigeria.

Rambanapassi (1997) in his study of periodic markets in Zimbabwe supports this argument by highlighting that socio-economic institutions, within which human development thrives, can only be established adequately in periodic markets for the rural population. In his attempt to show how periodic markets stimulate rural development he connected rural production and marketing and said the result is increased income. Relatively higher income leads to demand for other services like education, health and advanced goods, which in turn stimulates investments in rural areas and consequently provision of infrastructures for transport, communication and energy. This initiates the transformation journey towards civilization and modernization (Kio-Lawson et. al., 2015)

The nature of rural production, inadequate demand and limited mobility of rural residents necessitates periodic marketing (Bromley, 1976 and Mundal, 2006). These markets then provide a chance for rural producers to dispose their surplus and access other goods and services from higher central places (Obudho, 1983; Tacoli, 2004; Abimbola, 2012; Angmor, 2012; Belgaum, 2014). As noted by Park (1981), and Bromley, even the fixed shops and other fixed service providers make their maximum profits during the day when there is a periodic market.

Provision of basic services and manufactured goods to rural populations reduces the development gap (Bromley, 1976) and brings down the urban element (Kio-Lawson et. al., 2015). This creates a link between the rural central places and the larger functional hierarchy and as Park (1981) states, the rural central places absorb rural labour which would have otherwise moved to urban areas where there are limited employment opportunities. In addition, Ssabavuma (2008) noted that much of the labour in rural areas is unskilled and semi-skilled and cannot be absorbed by the formal sector hence finding its way to the periodic markets. The function of periodic markets as avenues for local exchange and access to goods not produced locally, reduces post-harvest losses and farmers expand their production beyond subsistence needs (Kio-Lawson et. al., 2015)

2.2.1.2 Studies in East Africa and Kenya

In East Africa, the link between periodic marketing and rural development has been documented in the works of Good (1975), and Ssabavuma (2008), who studied periodic markets in Uganda. Good focused on the influence of periodic marketing on travelling traders (itinerant traders). According to him, this type of market is a defining feature of most developing countries in

Africa, Asia and Latin America. He clarified that the excellence of markets as growth centres is determined by the degree of connectivity to the hinterland and other urban centres. This clears the doubt on the need for an efficient transport network.

Good states that regular markets did not exist in East Africa before independence. His study reveals that periodic markets in Uganda tend to coincide with national economic systems set by the colonial governments. His findings were later supported by Tacoli (2004) and Kio-Lawson et, al., (2015) that periodic markets are important endpoints for manufactured goods destined for the rural resident. Besides, the degree of marketing in periodic markets of Uganda reaches its maximum during specific festive seasons notably Christmas and Easter seasons. Good (1975) noted that most of the traders who engage in manufactured goods tend to sell a variety of merchandise in order to spread their profits. Traders also diversify their economic activities by engaging in more than one. For instance, a trader who sells manufactured goods may also engage in crop production, food processing and also buy products from other farmers for resale. A study by Ssabavuma (2008) revealed a positive correlation between the distribution of periodic markets and road network. In terms of income generation, farm produce fetches more money at the market than when it is sold directly at the farm point.

In addition, Ssabavuma found out that around 96% of the people employed in periodic markets lacked the necessary qualification to secure formal employment. This showed the role played by periodic markets in absorbing rural labour. The research clearly showed the rural-urban linkage and the antagonistic movement of farm produce and manufactured goods. A similar finding is made by Kio-Lawson et, al., (2015) who pointed out that this linkage extends the urban life to the rural area. Good concentrated in finding out a way of coming up with an optimal route that will maximize market participation and minimize transport costs.

Ssabavuma (2008) connected periodic markets and rural development in Butambala county of Uganda. He agreed with Good (1975) that many of the manufactured goods in Uganda are obtained from periodic markets. The markets are essential centres for employment, income generation and poverty eradication. Rural producers depend on these markets not only to sell their output but also to acquire farm inputs. In an attempt to solve the problem posed by Good, he recommended a cost-effective distribution system of the markets to enhance rural development. His study revealed the role of periodic markets in enhancing access to social services, household necessities and commercialization of agriculture.

In Kenya, studies on rural development in connection to periodic markets are documented in the works of Obudho (1983) and Gaile (1988). Gaile focused on the strategic location of small towns to achieve optimal marketing and employment creation. He states that those large-sized markets don't favour small scale producers hence the need for rural markets. Obudho discussed the role of periodic markets as the lowest unit in the hierarchy of central places and how it enhances urbanization in Kenya through a bottom-up strategy. Lado (1991) discussed periodic markets and their role in socio-economic development in Bungoma District and found out that there were improvements in infrastructural facilities courtesy of periodic markets.

Wambugu (1995) analyzed the Spatio-temporal pattern of periodic markets in Nyeri District and concluded that the spatial and temporal location of markets in the district favours consumers more than traders. He recommended a synchronization of periodic markets with other social facilities to attain overall development in the region. Kyaka (1998) not only studied the Spatio-temporal structure of periodic markets but also the effects of such markets on the environment. His study focused on periodic livestock markets in Laikipia district. Kamara (2004) examined the impact of market access on the use of farm input and agricultural productivity in Machakos

district. He found out that farmers with large scale farms can access periodic markets and used more inputs hence recording the highest productivity.

2.2.2 Socio-Cultural importance of periodic markets

Periodic markets reflect the culture of the community in which they are held (Skinner, 1964). This can be found in the nature of commodities sold, location of the market and the name of the market (Ambakederemo and Kalu, 2018; Iormba and Adeeyo, 2018). In his attempt to examine the components of periodic markets, Richa (2011) identified bystanders as one of the participants. This group of people cannot be classified as either sellers or buyers. According to Omole et. al., (2014) these are the people who depend on the markets for dissemination of information. Bromley et. al., (1976) referred to it as general gossip.

Mohammad (2009) stated that these people use periodic markets as meeting points to discuss matters of the area; be it political social or economic. Omole adds that market gatherings give preachers a “ready” audience to spread the gospel; no wonder the location of many religious centres are in or near a market place. According to Park (1981), missionaries in Korea relied on these markets to spread the gospel of Christianity.

Meillassoux (1962) in Emole et. al., (2014) observed that markets serve a cultural function and as meeting places where people perpetuate their lineage rights (Abimbola, 2012); and they also allow people to meet friends and kinsmen for exchange of news and gossip. During campaigns, politicians depend on these markets (Omole et. al., 2012) to convince their followers and gauge their strength. Market centres are also venues for courtship and reunion.

2.2.3 Periodic markets and road transport network

Periodic marketing and road infrastructure are all spatial. Their relationship is not mutually exclusive and success in one depends on or leads to success in the other. Road construction is a product of cost-benefit analysis whereby in rural areas, most of the benefits are directly or indirectly attached to periodic markets. Ghosh (1981) noted that the spatial organization of economic activities in rural areas and social interaction depends on the Spatio-temporal pattern of periodic markets. Abua (2013) on the other hand stated that the distribution of rural market centres is correlated with the functioning of rural economy and its operation in space. Mu and Van de Walle (2009) found out that rural road network and the Spatio-temporal pattern of periodic markets are interrelated. In their study, they stated clearly that successful marketing is enhanced by effective road transport which is established in accordance with the temporal pattern of markets.

Proper road infrastructure reduces the cost incurred while visiting market centers as well as increased market activity hence higher incomes (Skinner, 1964). Tacoli (2004) emphasized that the link between rural producers and market outlets can only be established under physical infrastructure. It is such infrastructure that enable a downward channel for business organizations selling products to rural consumers through periodic markets (Velayudhan, 2016). Rural transportation is related to the degree of marketing and as observed in Ghana, (Angmor, 2012) poor nature of roads lead to delay and high cost of transporting goods to the markets as well as reduced participation in markets.

2.3 The conceptual framework

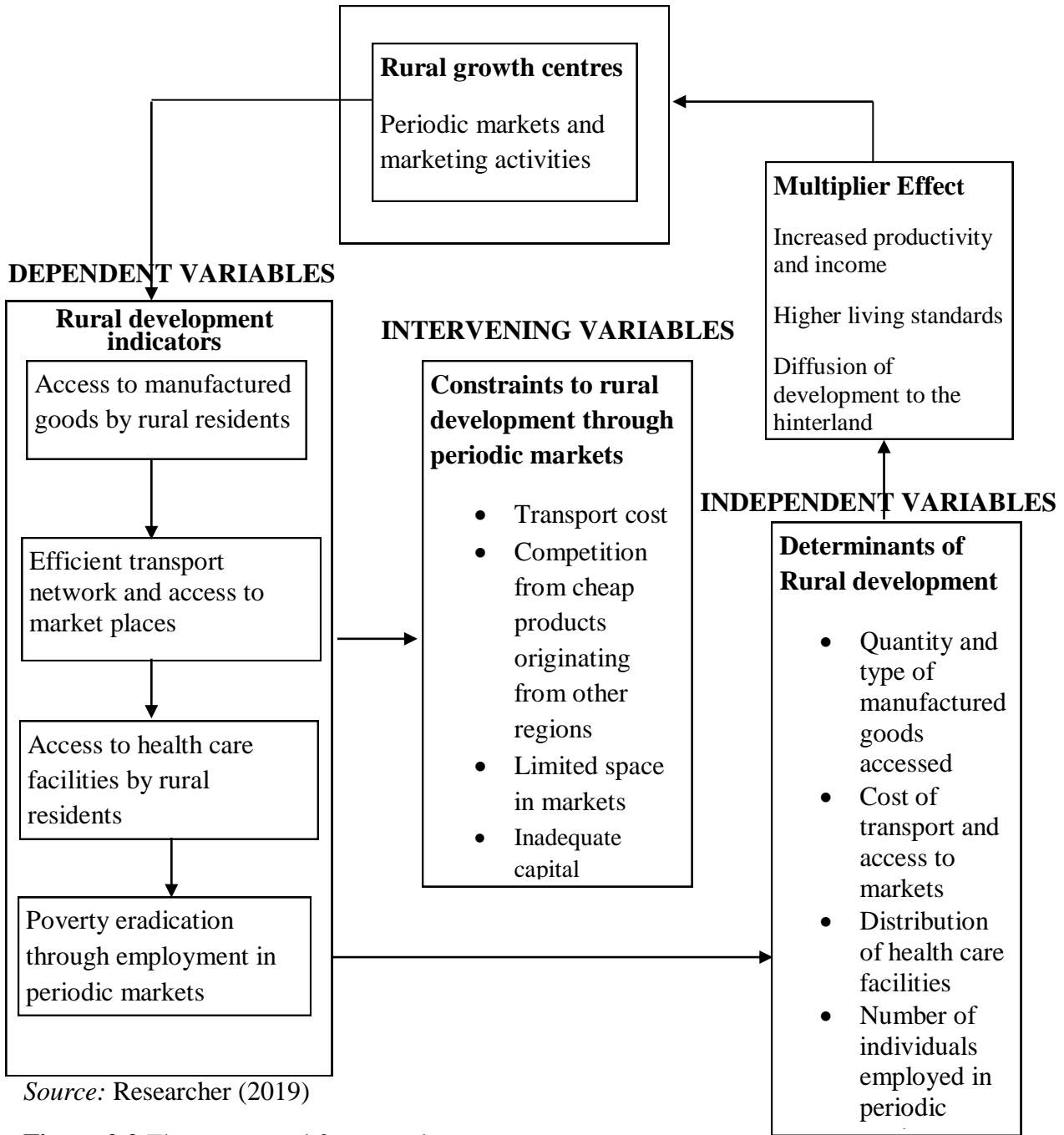


Figure 2.2 The conceptual framework

The dependent variable is rural development which is indicated by access to manufactured goods, efficient transport network, reduced levels of poverty and access to health care facilities.

The independent variables which are the determinants of rural development include the cost of transport, type and number of employment opportunities, the type of manufactured goods and the number of health care facilities in periodic market centres. The major intervening variable is the cost of transport.

2.4 Research gaps

A review of literature on the role played by periodic markets in rural development reveals that these markets are important in providing an outlet for farm produce and homemade products. Various research works make it clear that rural residents rely on periodic markets for simple manufactured goods and farm inputs. Available literature shows that the spatial distribution of periodic markets is a determinant of road network in rural areas.

However, research on how periodic markets enhance the modernity of life and general welfare of rural residents is inadequately documented. Given that rural residents in developing countries are gradually transforming their livelihoods; adequate research has not been done to examine how periodic markets can enhance such transformation towards modernization of rural areas. The available literature focuses on agriculture and cottage industry. Little is documented to link periodic marketing and the provision of essential services like health care, education and water.

This study fills the identified gaps by critically analyzing the role of periodic markets in provision of manufactured goods like various forms of electronics. The study also examines the role of periodic markets in poverty eradication and provision of health care in rural areas. The general aim of the study is to generate knowledge about how periodic markets can be used to enhance urban life in rural areas.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the research methodology used in the study. The chapter represents a framework upon which data collection and analysis was based. It discusses in detail the area of study, the study design adopted, target population and the sampling frame used in the study. The instruments of data collection and analysis are outlined in this chapter. The chapter also entails the statistical test applied to test the null hypothesis for the study.

3.1 The Study area

3.1.1 Location and physiographic characteristics of Mukaa Sub County

This study was carried out in Mukaa Sub County of Makueni County. The Sub County is located between longitudes 37⁰05' E and 37⁰30'E and latitudes 1⁰40'S and 2⁰05'S at the North Western part of Makueni County at the border of Kajiado County. The area has an undulating landscape characterized by plains of grasslands and woodlands. However, the eastern part is hilly since it lies on the lower parts of Kilungu hills. The Sub County headquarters are at Malili along the Mombasa- Nairobi highway. Mukaa Sub County is subdivided into eight(8) locations namely: Ngaamba, Malili, Kiima Kiu, Mukaa, Kwale, Kitaingo, Kasikeu and Muani.

3.1.2 Climatic conditions and Major economic activities

Mukaa Sub County experiences two rain seasons separated by a dry season. The long rains begin in March and end in May while the short rains are experienced from November to December. The low rainfall amounts below 1000mm per annum and the high temperatures above 20 degrees Celsius experienced during the dry spell from August to October leads to semi-arid conditions which dictate the economic activities in the area.

The major activities include subsistence agriculture with the main crops being the cereals. In addition, fruit farming forms a large section of agricultural activities. The main fruits include Mangoes, oranges, pawpaw and avocado. Livestock keeping is also practiced in Mukaa Sub County. However, due to the semi-arid conditions, farmers keep the indigenous breeds. Ranching and nomadic pastoralism is carried out in the area. Apart from agriculture, other economic activities in Mukaa Sub County include transportation and trading.

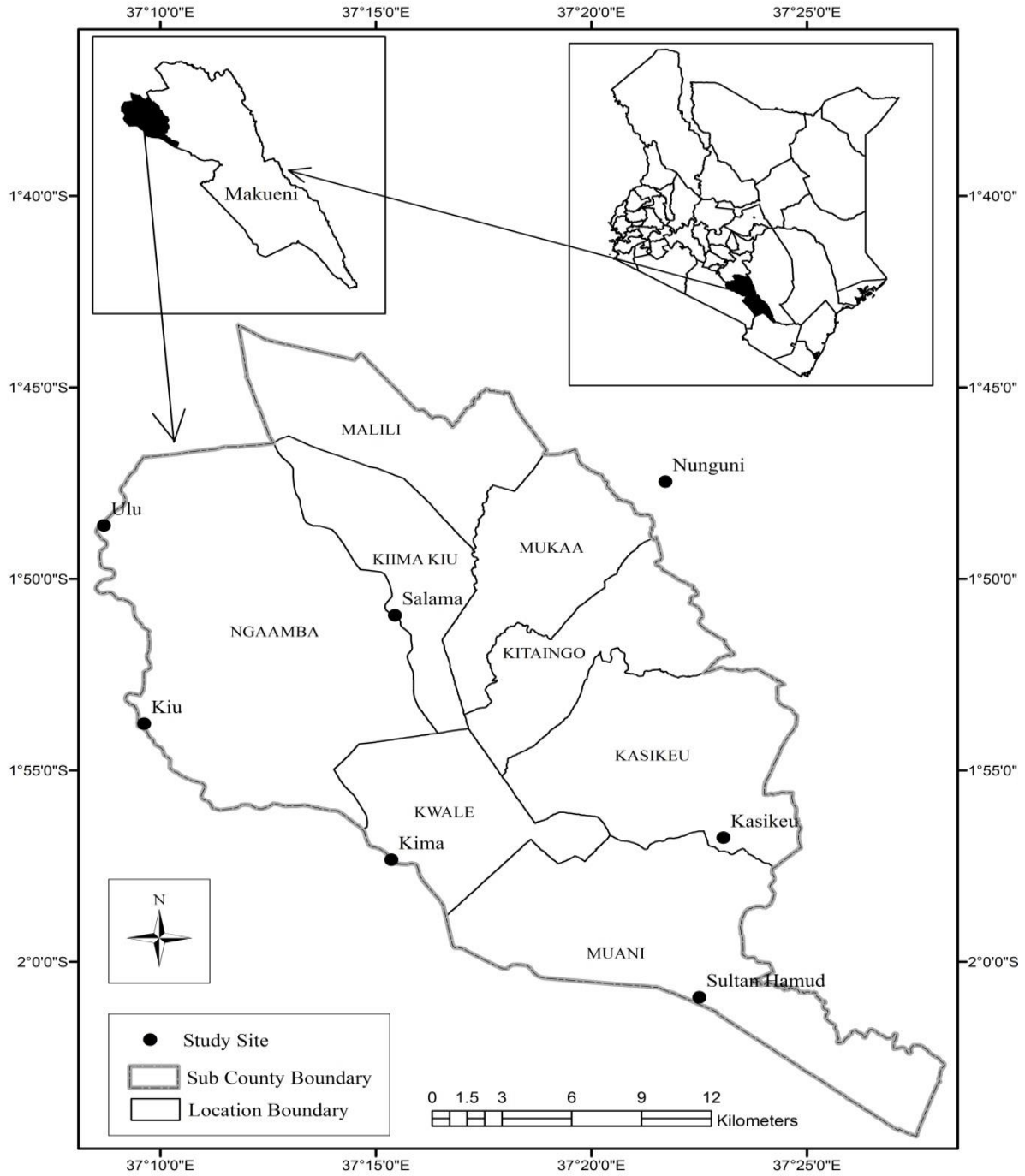
3.1.3 Transport infrastructure

Mukaa Sub County has both tarmac roads and Murram roads. The major tarmac road is the Mombasa-Nairobi Highway that crosses through the Sub County. From the main roads, two feeder roads connect off-road markets of Nunguni and Kasikeu respectively. Various murram roads connect the trading centres to the main road. Another notable transport infrastructure is the Mombasa - Nairobi meter-gauge railway that forms the border of Makueni county and Kajiado County.

3.1.4 Development potentials and challenges in Mukaa Sub County

Mukaa Sub County has diverse potential from its physical and climatic characteristics. Both rain-fed agriculture and irrigation are carried out in the area. In addition, the Sub County borders Kajiado County which is rich in livestock products and vegetables from irrigation agriculture. The Sub County is also traversed by the Nairobi-Mombasa highway that provides transport services into and out of the area.

However, these opportunities have not been adequately tapped and the Sub County experiences underdevelopment indicated by low food production, high transport costs, healthcare challenges and unemployment especially among the youth. This study aimed at examining the role of periodic markets in enhancing development through periodic marketing in the Sub County.



Source: GIS generated map 2019

Figure 3.1 Map of Mukaa Sub County

3.2 Research design

A research design is a blueprint adopted by a researcher aiming at controlling the factors that might interfere with the study and the validity of findings. The design dictates the techniques of collecting data. In addition, the researcher is able to deal with time and cost constraints through the research design. This study adopted a survey research design by administering/filling of questionnaires to respondents and conducting interviews with key informants. The design was used to collect both quantitative and qualitative data.

3.3 Sampling Frame

A sampling frame is a strategy for selecting a representative number of units from the target population. A target population is a universe whose members possess the characteristics the researcher is interested in. The target population for this study entailed all the traders and shoppers in periodic markets in Mukaa Sub County. Traders were selected using purposive sampling which was multi-staged in order to come up with the sample of traders and shoppers.

Seven markets in a cycle of one week were selected according to the days of the week. For those days with more than one market, the largest market by population estimates was selected. Four traders from each market were selected purposively according to the categories of goods they deal in. The categories are simple electronics, consumer manufactured goods, clothes and kitchen wares. This formed a total of 28 traders. Four shoppers from each trader were randomly selected. This made a total of 112 shoppers. Of the four shoppers per trader, two were female and

two were male. This framework led to two sample sizes. For traders, a sample size of 28 was used and a sample of 112 for shoppers.

The sample size of traders was determined by the purposive sampling technique which included only four categories of sellers in seven markets hence a sample of 28 traders. On the other hand, the exact population of shoppers was not known but according to the Kenya National Bureau of Statistics (KNBS) as published in the County Integrated Development Plan (CIDP) of 2013, it exceeded 10,000. The following formula suggested by Mugenda and Mugenda(2003) was used to compute the sample size.

$$n = \frac{Z^2 p q}{d^2}$$

Where:

n – Desired Sample size

Z – z-score at the required confidence level

P – Proportion of the target population estimated to have the characteristics being measured

q – 1-p

d - Level of statistical significance set

The researcher assumed that 92% of the shoppers had the information being researched.

For this study:

z – 1.96

P – 0.92

q – 0.08

d – 0.05

Therefore, $n = \frac{1.96^2 \times 0.92 \times 0.08}{0.05^2}$

n = 113

The sample was then distributed to the sample of traders as follows:

113 shoppers/28 traders = 4.04.

Therefore, four shoppers were selected for each trader hence a final sample size of 112 shoppers.

3.4 Data collection

Primary data were obtained from shoppers and traders in periodic markets. The markets were selected sequentially according to the days of the week. Published works like CIDP and County Statistical Abstracts were the key sources of secondary data. Primary data were collected from traders and shoppers through structured questionnaires, in-depth interviews and observation. To ensure a balance between male and female traders, a ratio of 1:1 was maintained in all the markets.

Data on the type and quantity of manufactured goods were obtained from buyers through structured questionnaires which categorized the goods into various groups. In addition, structured observation was used and observations recorded in observation sheets. Data on the number of traders and the number of people employed in various activities in periodic markets were collected from county market officials through structured interviews. Structured questionnaires were administered to traders in order to obtain data on transport costs and trader attendance rate in periodic markets.

3.5 Data analysis and hypothesis testing

The collected data were summarized in frequency distribution tables. Descriptive statistics like calculation of percentages were computed. Data was also entered in excel spreadsheets and

simple linear regression analysis($y = a+bx$) used to compute the relationship between variables. The strength and direction of the relationship between variables were computed using Pearson's correlation coefficient. The null hypothesis formulated for the study was tested using the Chi-square (χ^2) test. The analyzed data was then presented in graphs generated by excel spreadsheets. GIS technique was applied to map periodic markets in the study area.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter covers the main findings and discussion. The data is summarized in frequency distribution tables and various statistical methods applied to analyze the data. The data is analyzed and discussed in line with the objectives of the study. The analyzed data is presented using graphs and pie charts. Also, the null hypothesis formulated for the study is tested.

4.1.0 Social Characteristics of respondents

4.1.1 Age and sex of respondents

To avoid gender bias, the study ensured a balance between male and female respondents. A ratio of 1:1 was maintained to both groups of respondents (Traders and buyers). However, the study did not consider the age of the respondents. It entailed any adult trader and buyer. However, the traders were selected purposively according to the type of goods they sold.

4.1.2 Education level of traders

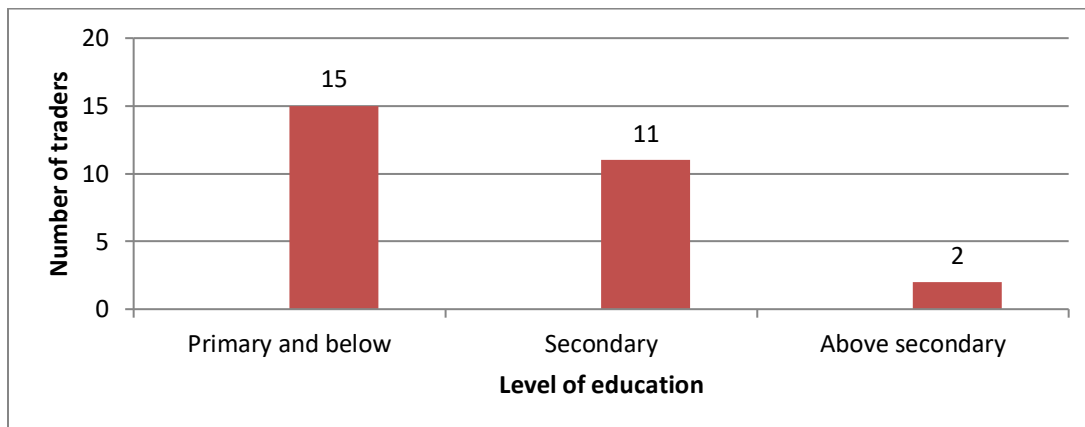
The study examined the education level of respondents in the category of traders only. The levels were grouped into three categories. (i) those traders who had primary education and below, (ii) traders with secondary education and (iii) traders who had attained above the secondary level.

Table 4.1 Education level of traders in periodic markets

Education level	Number of traders	Percentage
Primary and below	15	53.57
Secondary	11	39.29
Above secondary	2	7.14
Total	28	100

Source: Field data (2019)

The study established that over half of the respondents had only primary education. This was represented by 53.57% of the total respondents. Only 7.14% of the respondents had attained education above secondary level. Notably, 39.29% of the respondents had secondary education. Traders with primary education and secondary education form the bulk of the participants in periodic markets. This is represented by 92.86% of the respondents.



Source: Researcher (2019)

Figure 4.1: Education level of respondents (Traders)

It was therefore concluded that most of the traders in periodic markets do not have the educational qualification needed for formal jobs hence finding employment in periodic markets.

4.2 Marketing behaviour of traders in one market cycle

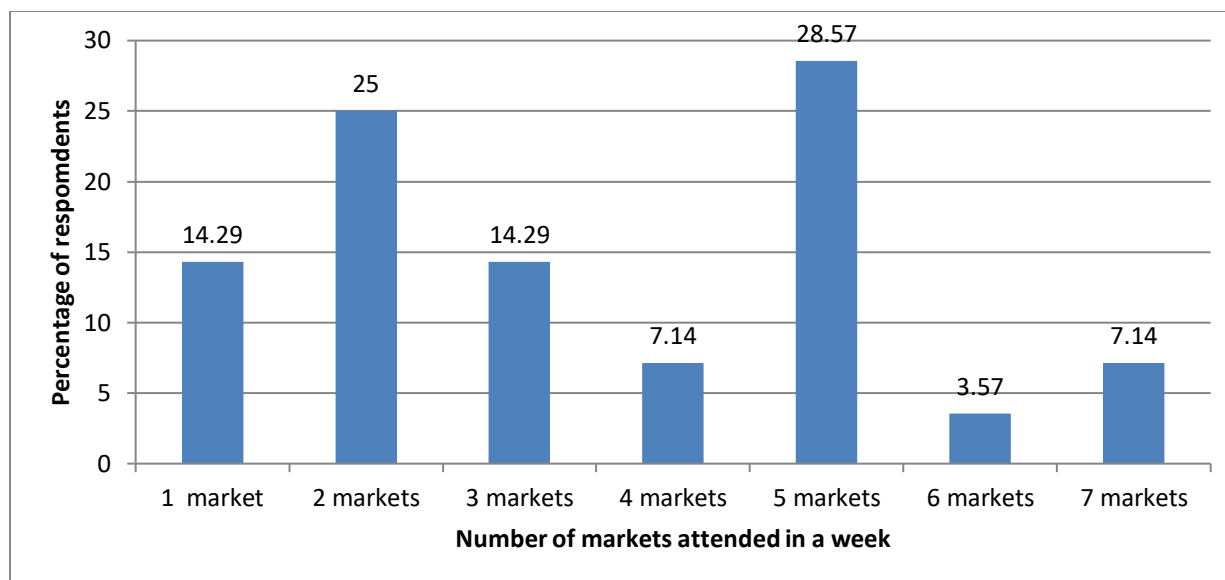
Periodic marketing is associated with mobility of traders from market to market in a cycle. In Mukaa Sub County, a market cycle is usually one week of seven days. Some of the traders may attend all the markets in a cycle while others choose to attend a given number of markets in the cycle. This may depend on the level of demand or convenience. The study established the marketing behaviour of respondents in Mukaa Sub County.

Table 4.2 Marketing behaviour of traders in one market cycle

Number of markets attended in a week	Number of traders	Percentage
1	4	14.29
2	7	25.0
3	4	14.29
4	2	7.14
5	8	28.57
6	1	3.57
7	2	7.14
Total	28	100

Source: Field data (2019)

It was found out that in a marketing cycle of one week, only 7.14% of the respondents completed the cycle by attending all the seven markets. Most of the traders attend two markets and five markets. This was represented by 25% and 28.57% of the respondents respectively. Many of the respondents attributed this behaviour to the cost of transport. The effect of transport cost was also examined.



Source: Researcher (2019)

Figure 4.2: Marketing behaviour of respondents (traders) in one market cycle

4.3 The effect of transport cost on the rate of trader attendance in periodic markets.

The study examined the type of relationship between the average cost of transport and the number of respondents in the category of traders who attended the markets sequentially.

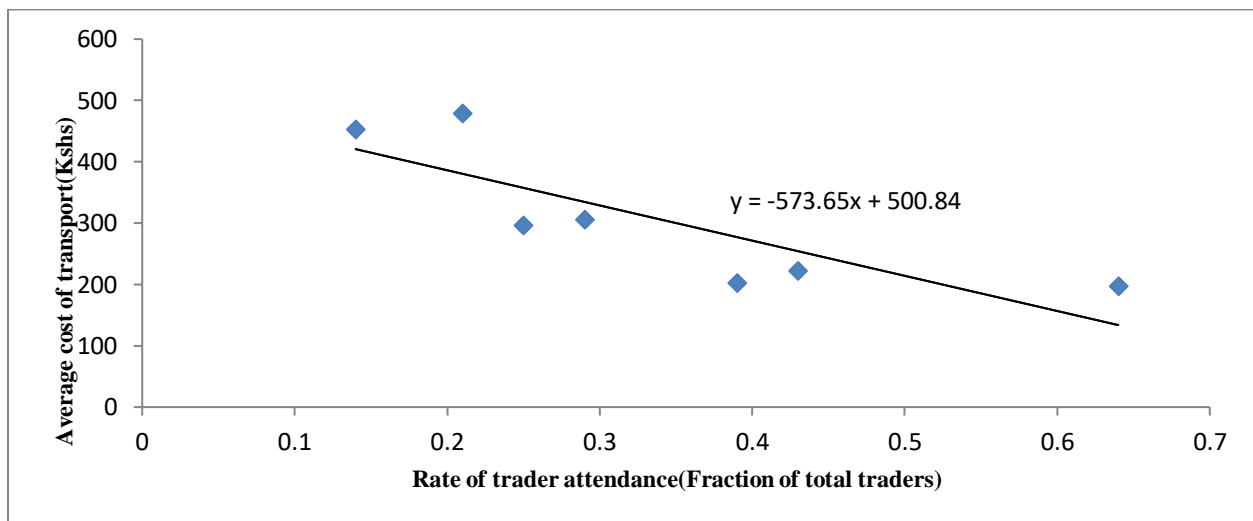
Table 4.3 Effect of transport cost on the rate of trader attendance to periodic markets

Sequential arrangement of periodic markets	Average transport cost(Kshs)	Number of traders	Rate of trader attendance
Kiu to Ulu	305.88	8	0.29
Ulu to Nunguni	453.13	4	0.14
Nunguni to Salama	222.22	12	0.43
Salama to Sultan Hamud	202.94	11	0.39
Sultan Hamud to Kasikeu	197.37	18	0.64
Kasikeu to Kima	479.41	6	0.21
Kima to Kiu	296.88	7	0.25

Source: Field data (2019)

The average cost was used because traders incur varied costs depending on the amount of goods they transport from market to market. The cost factor was applied since any other factor that limits transportation leads to changes in the cost incurred. Therefore, Simple linear regression analysis was used to analyze the relationship and Pearson’s correlation analysis computed to find the strength of the relationship.

The regression equation($y = a+bx$) was computed and revealed a negative relationship. The computed equation was $Y= 500.8 - 573.6x$.



Source: Researcher (2019)

Figure 4.3: A scatter plot showing the relationship between transport cost and rate of trader attendance in periodic markets.

Pearson’s correlation coefficient(r) was also computed. The following formula was applied.

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

The calculated coefficient (r) was -0.825. This revealed a strong negative correlation between the average cost of transport and the rate of trader attendance in periodic markets.

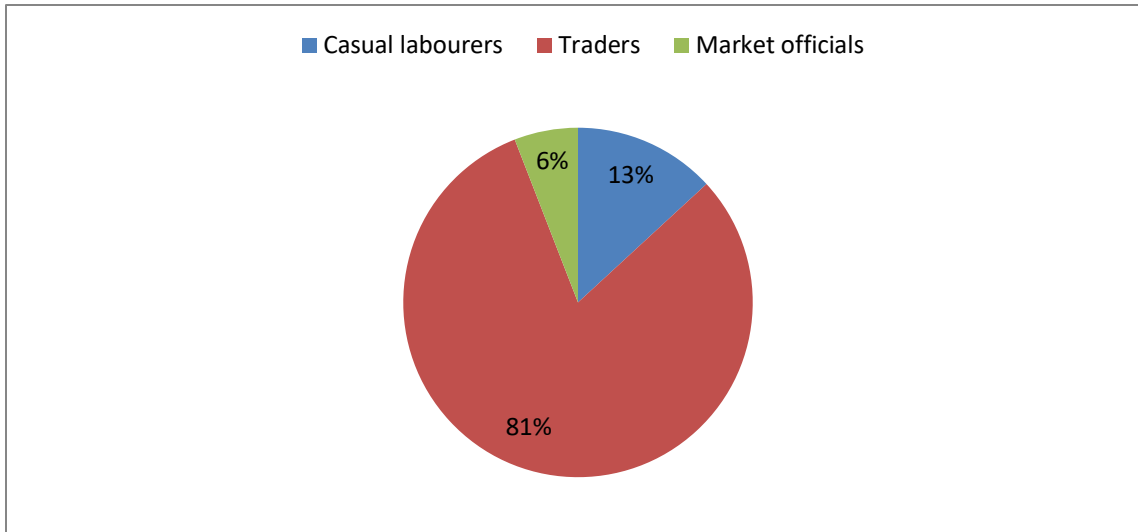
4.4 The role of periodic markets in employment creation.

Rural residents find various forms of non-farm employment in periodic markets and market centres. They include but not limited to: transport operators, traders, market officials and casual labourers. The study examined three categories of employment. These are casual labourers, traders and market officials. In all the seven markets, 357 individuals were self-employed as mobile traders. 58 individuals worked as casual labourers to move goods during market days and 28 individuals worked as market officials employed by the county government. Of the three categories, traders formed the bulk with 81%.

Table 4.4 Employees absorbed in various jobs in periodic markets

Nature of employment	Number of employees
Casual labourers	58
Traders	357
Market officials	26

Source: Field data (2019)



Source: Researcher (2019)

Figure 4.4: Types of employment opportunities offered by periodic markets



Plate 1: A man finds employment by pushing a wheelbarrow containing goods at Nunguni Market on 16th April 2019 at 10.44 AM.

4.5.0 Periodic markets and provision of manufactured goods to rural residents.

Rural residents with limited mobility to large urban centres rely on periodic markets for purchase of simple electronics for communication, energy and entertainment and purchase of other manufactured goods for domestic use. The study examined various types of manufactured goods that rural residents access from periodic markets. The goods were then classified into simple electronics and basic consumer manufactured goods.

4.5.1 Periodic markets and provision of simple electronics to rural residents.

Rural residents in Mukaa Sub County rely on periodic markets for simple electronics. These markets have also transformed to meet this need. The study examined and established given categories of electronics which rural residents access from periodic markets. They were categorized into radios, mobile phones, television sets, solar panels and bulbs.

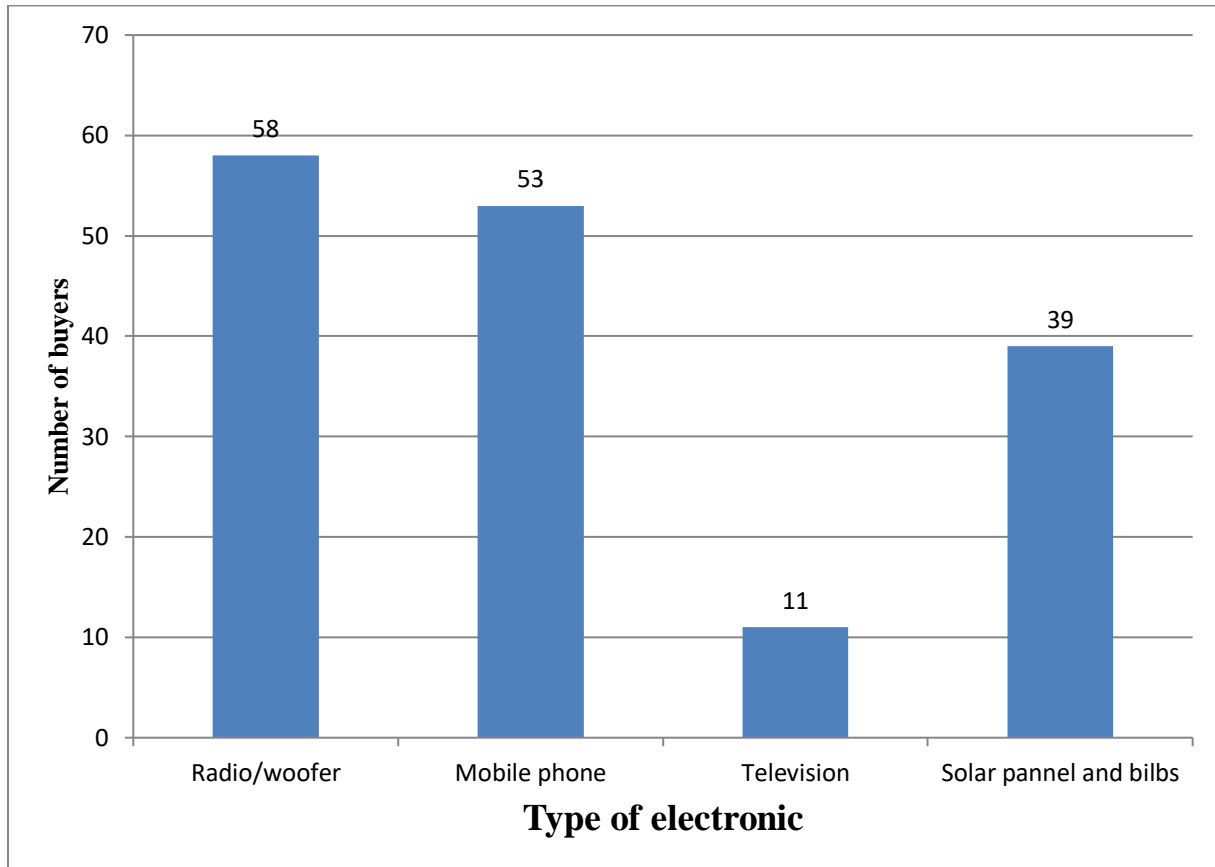
Table 4.5 Types of electronics accessed in periodic markets

Nature/type of electronic	Number of buyers	Percentage
Radio/woofer	58	51.79
Mobile phones	53	47.32
Television	11	9.82
Solar panel and bulbs	39	34.82

Source: Field data (2019)

The study revealed that 47.32% of the total respondents in the category of buyers relied on periodic markets for the purchase of mobile phones. The largest percentage of respondents(51.79%) depend on these markets for supply of radios and woofers. Only 9.82% of

the respondents had purchased a television in periodic markets. A percentage of 34.82 represented the respondents who relied on periodic markets for purchase of solar panels and bulbs.



Source: Researcher (2019)

Figure 4.5: Role of periodic markets in the provision of simple electronics

The study also revealed that as the nature of the electronic becomes bigger and costly, a fewer number of respondents bought it. This is indicated by the declining percentage from radios, mobile phones, solar panels and televisions.



Plate 2: a trader displaying some of the electronics accessed in periodic markets by rural residents at Nunguni Market on 16th April 2019 at 10.40 Am.

4.5.2 Periodic markets and provision of basic consumer manufactured goods

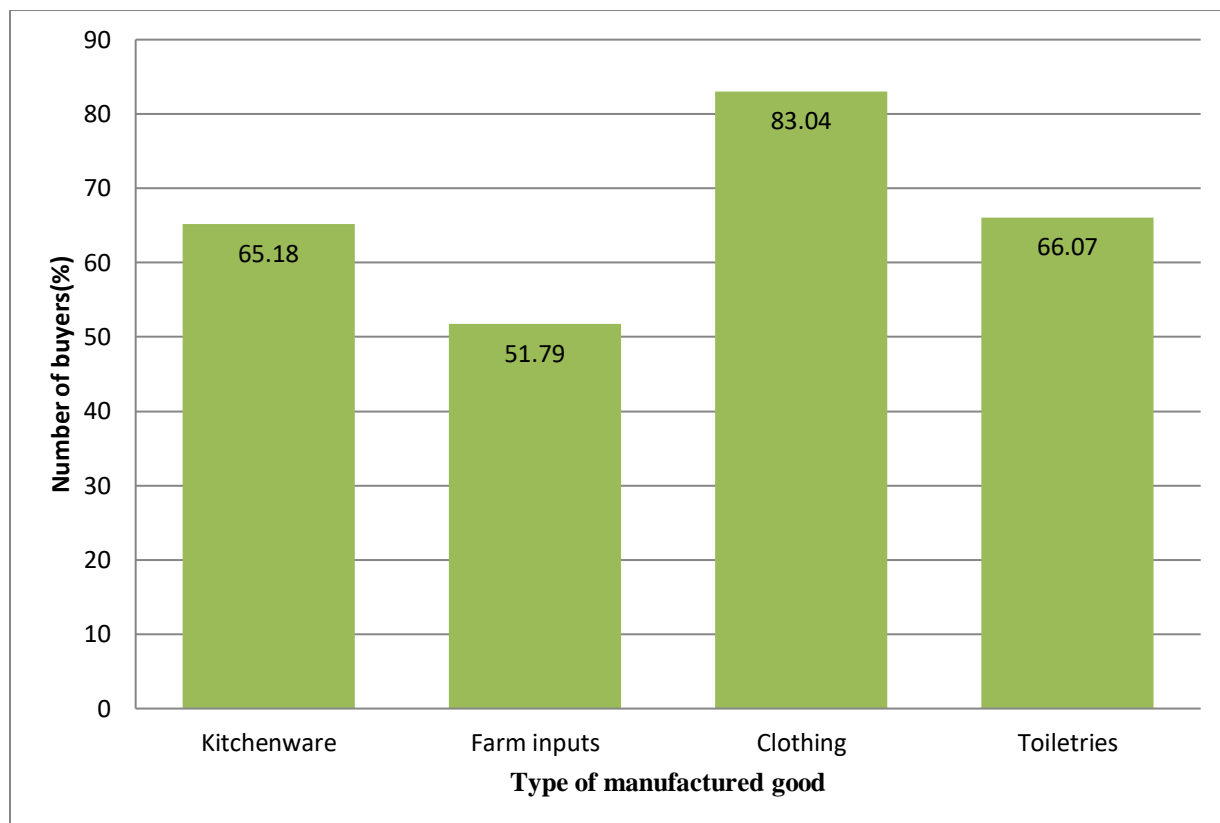
Rural residents visit periodic markets for purchase of manufactured goods for domestic consumption. The study examined the types of basic manufactured goods accessed from periodic markets in Mukaa Sub County. The goods were categorized into four categories namely; kitchenware, farm inputs, clothing and toiletries.

Table 4.6 Basic consumer manufactured goods provided by periodic markets

Nature of goods	Number of buyers	Percentage
Kitchenware	73	65.18
Farm inputs	58	51.79
Clothing	93	83.04
Toiletries	74	66.07

Source: Field data (2019)

The study established that 83.04% of the respondents relied on these markets to meet their clothing needs. The least percentage was for those respondents who relied on the markets for farm inputs. However, it is significantly high since it is over half(51.79). Kitchenware and toiletries attained 65.18% and 66.07% respectively.



Source: Researcher (2019)

Figure 4.6: Various categories of manufactured goods accessed in periodic markets.



Plate 3: A trader in Kasikeu Market showing the different types of basic consumer manufactured goods purchased by rural residents (12th April 2019 at 12.57 PM).



Plate 4: The researcher filling in a questionnaire administered to a trader of manufactured goods at Kima Market on 13th April 2019 at 11.34 AM.

4.6 Spatial distribution of periodic markets and access to health care facilities by rural residents.

One of the contributions of periodic market centres to rural development is access to health care facilities by rural residents. The study compared the difference between the spatial distribution of periodic markets and access to health care facilities. Respondents in each market were asked whether they access or don't access medical facilities in the market. It was established that 58.93 of the respondents in the category of buyers accessed medical facilities in periodic market centres. On the other hand, 41.07% of the respondents did not access medical facilities in periodic markets.

Table 4.7 Buyers who access medical facilities in periodic markets versus those who don't access

Market	Number of buyers who access	Percentage	Number of buyers who don't access	Percentage	TOTAL
Kiu	9	8.04	7	6.25	16
Ulu	10	8.93	6	5.36	16
Nunguni	11	9.82	5	4.46	16
Salama	10	8.93	6	5.36	16
Sultan Hamud	11	9.82	5	4.46	16
Kasikeu	8	7.14	8	7.14	16
Kima	7	6.25	9	8.04	16
TOTAL	66	58.93	46	41.07	112

Source: Field data (2019)

These findings were used to test the null hypothesis for this study.

4.7 Challenges faced by traders in periodic markets

These are the barriers that limit both attendance to periodic markets by traders and the amount of profits earned. The respondents were allowed to give any challenges that they face. They cited

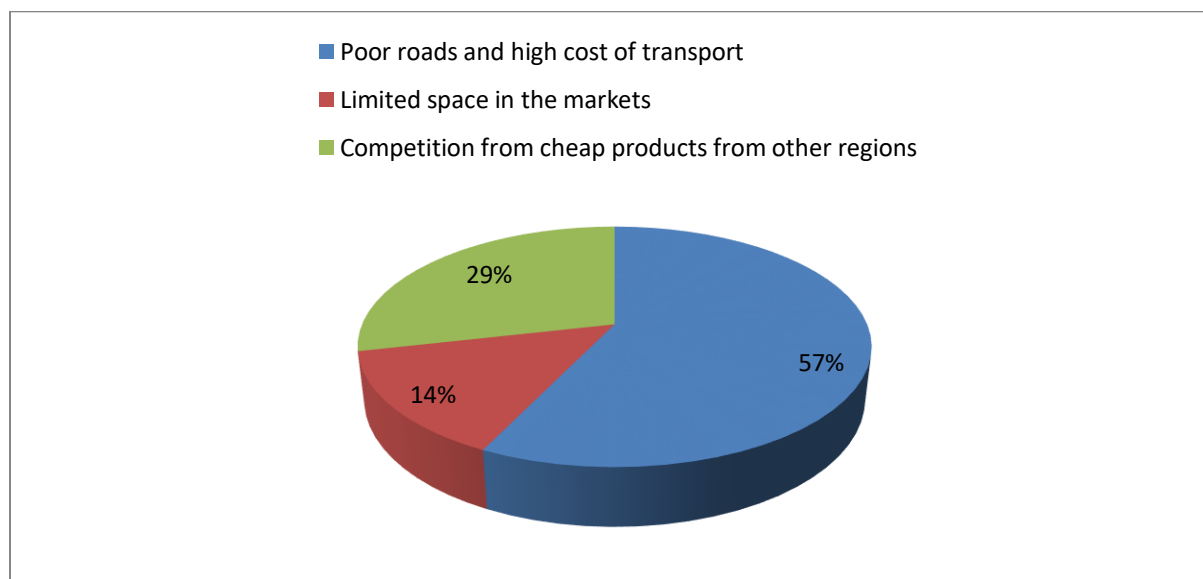
three categories of challenges. (i) Challenges relating to poor roads and high cost of transport, (ii) limited space for displaying goods in periodic markets and (iii) Competition from cheap products from other regions.

Table 4.8 Challenges faced by traders in periodic markets

Nature of challenge	No of respondents (traders)	Percentage
Poor roads and high cost of transport	16	57.14
Limited space for trading	4	14.29
Competition from cheap products from other regions	8	28.57

Source: Field data (2019)

Over half of the respondents (57.14%) identified poor roads especially during the rainy season and high cost of transport as the major challenge. 28.57% identified the challenge of stiff competition from cheap goods originating from other regions and only 14.29% shortage of marketing space as a challenge.



Source: Researcher (2019)

Figure 4.7: Distribution of challenges faced by traders in periodic markets

It is therefore clear that the major challenges facing traders in periodic markets of Mukaa Sub County is high transport cost and poor roads. This supports the earlier finding of a strong negative correlation between the cost of transport and the rate of trader participation in periodic markets.

4.8 Testing the null hypothesis.

A hypothesis is a proposition formulated by the researcher which is to be confirmed after data collection and analysis. The null hypothesis is formulated negatively with the researcher aiming at rejecting it. One null hypothesis was formulated for this study.

Ho: There is no significant relationship between the cost of transport and the rate of trader participation in periodic markets.

The hypothesis was tested using the Chi-square (χ^2) test. As a test of difference, the chi-square uses the following formula.

$$\chi^2 = \sum \frac{(o-e)^2}{e}$$

Where: χ^2 is Chi-square

\sum is summation of

O are the observed frequencies and

e, are the expected frequencies

The calculated Chi (χ^2) statistic was 3.67. The critical value of Chi-square at a confidence level of 0.05 and six degrees of freedom was 12.59. Since the calculated Chi value is less than the critical value, the researcher failed to reject the null hypothesis that there is no significant difference between the spatial distribution of periodic market centres and access to health care facilities by rural residents. It was therefore concluded that to a significant extent, the distribution of health care facilities in Mukaa Sub County is in line with the spatial distribution of periodic markets.

4. 9 Limitations of the study

Notable limitation of the study is that the study area is characterized by homogeneity of culture. This may limit the study findings from being applied in other areas with different cultures. To overcome this limitation, the study focused on development indicators and facilities of universal applicability. These are health care, transportation, access to manufactured goods and income generation. The researcher also faced financial constraints hence hiring only one research assistant.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the findings of the study. The general objective of the study was to analyze the role of periodic markets in rural development of Mukaa Sub County. The chapter also outlines the major conclusions from the findings. The findings and conclusions are used in this chapter to give recommendations to various sectors.

5.2 Summary of findings

To achieve the main objective of the study, four research questions were outlined. The study sought to provide answers to the following questions:

- i. What is the impact of temporal and spatial distance between periodic markets and the rate of trader attendance in periodic markets?
- ii. How can periodic markets in Mukaa Sub County be used to alleviate poverty?
- iii. What types of manufactured goods are accessed in rural periodic markets?
- iv. What is the relationship between the spatial distribution of periodic markets and access to health care facilities in rural areas?

To provide answers to the above research questions, four specific objectives and one null hypothesis were formulated for the study. The first objective was to analyze the effect of spatial and temporal distance on the rate of trader participation in periodic markets in Mukaa Sub

County. The spatial distance was measured in terms of transport cost while the temporal distance was measured by the sequential arrangement of periodic markets on a daily basis.

To achieve this objective, the study applied simple linear regression analysis and Pearson's correlation analysis. The study established that a negative relationship between Spatio-temporal distance and rate of trader attendance in periodic markets exist. The regression equation($Y=a+bx$) was $Y=500.8-573.6x$. This implied that, at any transport cost beyond 500.8 shillings, the rate of trader attendance will be zero.

In addition, the computed Pearson's correlation coefficient was -0.825. Therefore, the study established that there is a strong negative correlation between the Spatio-temporal distance and the rate of trader attendance in periodic markets.

These findings are in agreement with the findings by Skinner (1964) Wanmali (1980) and Rozelle et, al., (2003). The study also revealed that to optimize trader attendance in periodic markets, there is a need to find frameworks for reduction of transport cost.

The second objective was to examine the employment opportunities in periodic markets that can be used to alleviate poverty in rural areas. The study through in-depth interviews with County market officials revealed that about 360 individuals in the Sub County are self-employed as traders in periodic market. Similarly, about 60 individuals especially men found jobs in periodic markets by offering transport services of moving goods during market days. Research findings also indicated that over 25 persons were employed as market officials by the county government. Using an estimated population of over 10,000 then it was concluded that periodic markets and marketing activities have contributed above 5% in poverty alleviation in Mukaa Sub County.

During the study, the researcher also observed that men were employed in the construction of temporary market stalls and provision of transport facilities between market centres by use of commercial motorcycles. In addition, an interview with a fixed restaurant operator in one market (Kasikeu) revealed that she made highest profit during the day when there was a periodic market held. This concurred with the findings by Bromley et, al., (1976) and Park (1981).

The third objective was to discuss the types of manufactured goods accessed in rural periodic markets. The goods were categorized into simple electronics and consumer manufactured goods for domestic use. The findings of the study revealed that 47.3% of rural residents access mobile phones from periodic markets while 34.8% rely on the markets for the purchase of solar panels and bulbs. The study findings also indicated that few rural residents (9.8%) purchase television sets from periodic markets.

The research findings also revealed that only the simple and relatively cheap electronics are accessed in rural periodic markets. This is perhaps due to the economic status of rural residents. In terms of basic consumer manufactured goods, the study findings showed that 83% of rural residents rely on periodic markets for the purchase of clothes while 66.1% and 65.2% purchase toiletries and kitchen wares respectively. Only 51.8% relied on these markets for purchase of farm inputs. This percentage is relatively low and was attributed to the fact that rural residents in Mukaa Sub County recycle seeds and use manure.

The last objective for the study was to establish the difference between the spatial distribution of periodic markets and access to health care facilities by rural residents. The study findings revealed that 58.93% of the rural residents access medical facilities in periodic market centres

while 41.07% don't access. In order to achieve this objective, a null hypothesis was formulated that:

Ho: There is no significant difference between the spatial distribution of periodic markets and access to health care facilities by rural residents.

The null hypothesis was tested using the Chi-square test. The calculated Chi-square test statistic was 3.67 while the critical value of Chi-square at a confidence level of 0.05 and six (6) degrees of freedom was 12.59. Since the calculated Chi-square statistic is less than the critical value, the null hypothesis was accepted. The research findings therefore, indicated that the distribution of health care facilities in rural areas is in line with the spatial distribution of periodic markets.

5.3 Conclusions

The research findings indicated that the rate of trader participation in periodic markets is a function of transport cost. It was found out that poor roads and high cost of transport forced traders to cease from visiting one market (Kima). The research concluded that development of road network using periodic markets as termini will reduce transport cost and increase the rate of trader participation hence boosting income generation and consequently socio-economic development.

The study also revealed that periodic markets and marketing activities are essential in providing employment opportunities to rural residents. The study findings indicated that major jobs provided by periodic markets include trading, transportation and market officials. The study also found out that 92.9% of the traders in periodic markets didn't go beyond secondary level of

education. Therefore, they are not able to seek formal employment hence relying on the periodic markets. These employment opportunities lead to income generation thus improved living standards hence poverty alleviation.

Study findings also showed that periodic markets are key sources of manufactured goods ranging from basic consumer manufactured goods to electronics. The study findings indicate that rural residents can now access manufactured goods like mobile phones and solar panels which initially could only be accessed in major urban centres.

Lastly, periodic market centres are ideal for setting of social facilities for health care, water and education. The study findings showed that over 50% of the rural residents in Mukaa Sub County access medical facilities in periodic markets. This was supported by the Chi-square test that showed that there is no significant difference between the distribution of periodic markets in space and access to health care facilities by rural residents.

5.4.0 Recommendations

5.4.1 Recommendations to policy makers

To create a vibrant commercial life in Mukaa Sub County, there is need for the county government to facilitate mobility of traders to the markets. The county government should make efforts to subsidize the transportation of traders and their goods. This will optimize trader participation, widen profit margins and generate income hence development of other economic and social sectors in the area.

The county government should also consider providing shades to traders especially those who deal in manufactured goods which are prone to adverse weather conditions like rain and sunny conditions. Besides, the Sub County office should think of changing the market place for Saturday from Kima to Malili. This is because the demand and rate of attendance in Kima are significantly low perhaps due to poor access. On the other hand, Malili is rapidly growing with new settlements and is easily and cheaply accessible through Nairobi-Mombasa highway. This will increase the trading of both agricultural products and manufactured goods.

Many traders and youths in the study area don't have the necessary knowledge and skills to start and run businesses. The county government should make an effort to organize training to traders and youth in order to foster a positive attitude towards business. The county government should also make efforts to offer credit facilities to the youths who are willing to start businesses but they are deficient of the initial capital.

The county and National governments as well as NGOs, should consider the spatial pattern of periodic markets while establishing facilities for social welfare like hospitals, local administration centres and water supply. This will enhance optimum utilization of such facilities.

5.4.2 Recommendations for traders in periodic markets

During the study, two observations were made which if traders can address, great improvements in their operations will be realized. One, in order to solve transport challenges, traders dealing in the same type of goods should make efforts to have joint transport which will be cheaper per trader. Traders should merge their efforts and create synergy to overcome the problem of high costs of transport.

Secondly, traders should make efforts to diversify their sources of goods. Traders should form cooperative societies in which they can jointly import manufactures goods or source them directly from the local manufacturer. This will widen their profit margins hence income generation.

5.4.3 Recommendations for further research

Little has been researched on the role played by periodic markets in the development of industries in rural areas. Research is needed on periodic markets as collecting points for raw materials used in industries set in rural areas. For Mukaa Sub County and Makueni County which is rich in fruit farming, research has not been done on the role of rural markets in value addition of agricultural products. Therefore, there is a need for research to fill this gap.

6.0 REFERENCES

- Abdulraheem M.K(2015) Effects of Market Periodicity on the Supply of Agricultural and Manufactured Products. *American Journal of Agricultural Science*. Vol. 2 No. 4 pp 159-163
- Abimbola A.(2012). Characteristics of Periodic Markets in Akungba-Akoko, Ondo State, Nigeria. *IFE Research Publications in Geography*. Vol 11 No. 1.
- Abua, O. C. et. al., (2013). Spatio-temporal distribution of rural markets in Bekwarra local government area of Cross River state of Nigeria. *Journal of Humanities and Social Science*, 16(3), 104-112.
- Allao, N.A.(1988). Periodic Markets in Western Nigeria, Theory and Empirical Evidences. North Western University, Department of Geography.
- Angmor E. N(2012) The Role of Road Transportation Service in the Development of Traditional Markets: A case of Asesewa and Agormanya Traditional Markets in Eastern Region, Ghana. Masters Thesis. Kwame NKurumah University of Science and Technology.
- Berry B.J.L(1967) *Geography of Market Centres and Retail Distribution*. New Jersey.
- Boudeville, I. R.(1966) *Problems of Regional Economic Planning*. Edinburg: Edinburg University Press.
- Bromley, R. J. (1976). Periodic markets and rural development policy. *Ekistics*, 49-54.
- Bromley, R. J.et. al., (1975). The rationale of periodic markets. *Annals of the Association of American Geographers*, 65(4), 530-537.
- Davis, B., et, al., (2017). Are African households (not) leaving agriculture? Patterns of households' income sources in rural Sub-Saharan Africa. *Food Policy*, 67, 153-174.
- Desai, S. S. (2013). Rural retail innovations in India: New dimension in marketing. *International Journal of Multidisciplinary and Current Research*, 1(3), 226-229.

- Ehinmowo A.A and Ibitoye (2010) Periodic Markets, A Common Marketing Feature in Akoko South West. *Journal of Geography and Regional Planning*. 3(12), 361-364
- Eighmy, T. H. (1972). Rural periodic markets and the extension of an urban system: a western Nigeria example. *Economic Geography*, 48(3), 299-315.
- Friedmann, J.(1966) *Regional Development policy: A Case Study of Venezuela*. Cambridge. MA: MIT Press.
- Gaile, G. L. (1988). Choosing locations for small town development to enable market and employment expansion: the case of Kenya. *Economic Geography*, 64(3), 242-254
- Ghosh, A. (1981). Models of periodic marketing and the spatiotemporal organization of market places. *The Professional Geographer*, 33(4), 475-483.
- Good, C. M. (1975). Periodic markets and traveling traders in Uganda. *Geographical Review*, 49-72.
- Hay, A. (1977). Some alternatives in the economic analysis of periodic marketing. *Geographical Analysis*, 9(1), 72-79.
- Hirschman, A.O(1958) *The Strategy of Economic Development*. New Haven, CT: Yale University Press.
- Hodder, B. W. (1965). Some comments on the origins of traditional markets in Africa south of the Sahara. *Transactions of the Institute of British Geographers*, 97-105.
- Ioramba, M. E., & Adeeyo, S. Y.(2018) A Synthesis Of Livelihood Opportunities From The Periodic Markets In Niger-East Senatorial District, Niger State, Nigeria. *International Journal of Innovative Research and Advanced Studies(IJIRAS)*. Volume. 5 Issue 1, 182-188
- Jackson, R.T.(1971) Periodic Markets in Southern Ethiopia. *Transactions of the Institute of British Geographers*, pp. 31-42
- Kamara, A. B. (2004). The impact of market access on input use and agricultural productivity: Evidence from Machakos District, Kenya. *Agrekon*, 43(2), 202-216.

- Kenny M. (2003). *Social and Economic Aspects of Policy and Planning*. National University of Ireland. Maynooth
- Khan, N., & Ali, A. (1998). Periodic Markets and Rural Transformation in Gonda District, Uttar Pradesh, India. *Focus on Geography*, 45(1), 34-37.
- Kio-lawson, D. et. al., (2015). Development of rural periodic market centres: An effective strategy for rural development in Rivers State, Nigeria. *Developing Country Studies*, 5(12), 122-134.
- Komarovski V.(2013) The Role of the Concept of “Growth Poles” for regional Development. *Journal of Public Administration, Finance and Law*. Issue 4(2013), 31-42.
- Kumar S.(2017). Transport Linkage Analysis of Rural Markets in Peripheral Blocks of Ranchi, Jharkhand. *Jharkhand Journal of Development and Management Studies*. 15(4) 7507-7525
- Kyaka, J. M. (1998). *The Spatio-Temporal structure of Periodic Livestock Markets and their Associated Environmental Effects in Laikipia District, Kenya* (Doctoral dissertation, University of Nairobi, Kenya).
- Lado, C. (1991). Rural Periodic Markets: A case study from North Malakisi Location, Bungoma District, Kenya. *Eastern and Southern Africa Geographical Journal*, 2(1), 37-55.
- Mandal, U. K.(2006) Determination of Relative Importance of Periodic Market Places in Rural Development in Saptari District, Eastern Nepal. *Nepalese Journal of Development and Rural Studies* 3(2)
- Mu, R., & Van de Walle, D. (2009). *Rural Roads and Local Market Development in Vietnam*. World Bank.
- Mugenda and Mugenda (1999). *Research Methods; Quantitative and Qualitative Approaches*. ACTS Press. Nairobi-Kenya.

- Muhammad, M.K(2009) *Role of Periodic Markets in Socio-Economic Transformation of Rural Areas in Ambedkarnagar District(UP)*. Masters Dissertation, Aligarh Muslim University, India.
- Mulimani A.A and Belgaum M.S(2012) *Periodic Markets and Rural Development: A case of Haveri District; Golden Research Thoughts*. Vol. 1 Issue xi pp 1-4
- Myrdal (1957). *Economic Theory and Underdeveloped Regions*: Vora and Co. Publishers Pvt Ltd
- Ndumbaro, F. G. (2017). *Weekly Market Spatial Flow Patterns of Foodstuffs and Its Impacts on Traders' Livelihoods in Mountain Regions: The Case of Mt Rungwe Region, Tanzania*. *Journal of the Geographical Association of Tanzania*, 35(1-2).
- Obudho, R. A. (1983). *Urbanization in Kenya: A bottom-up approach to development planning*.
- Okosun, S. E. (2016). *Market Conditions and Regional Development Planning in Ekiti-State, South Western Nigeria*. *International Journal of Marketing and Consumer Research* Vol, 32, 29 36.
- Omole, F. K. et al., (2014). *Analysis of market typology and functions in the development of Osun state, Nigeria*. *International Journal of Development and sustainability*, 3(1), 55-69.
- Park, S. (1981). *Rural development in Korea: the role of periodic markets*. *Economic Geography*, 57(2), 113-126.
- Parr, J. (1999). *Growth-pole Strategies in Regional Economic Planning: A Retrospective View*. Part 1. *Origins and Advocacy*. *Urban Studies*, 36(7), 1195-1215. Retrieved from <http://www.jstor.org/stable/43084259>
- Perroux, F. (1950). *Economic space: theory and applications*. *The Quarterly Journal of Economics*, 64(1), 89-104.
- Ploeg et,al., (2000). *Rural Development. From Practices and Policies towards Theory*. Blackwell Publishers. Oxford. U.K

- Porter, G. (2017). From Periodic Markets to Supermarkets: What Hope for Equitable and Sustainable Food Markets in Africa. *Journal of Sustainable Development*, 2(2), 2-8.
- Rambanapasi, C. (1997). The Periodic Markets Concept and The Transformation of The Rural Settlement Hierarchy in Zimbabwe. *Journal of African Research & Development*, 27/28, 237-257.
- Richa(2011). Periodic Markets and Rural Development. Retrieved from: <http://periodicmarketsandruraldevelopment.blogspot.com>
- Riddell, J. B. (1974). Periodic Markets in Sierra Leone. *Annals of the Association of American Geographers*, 64(4), 541-548.
- Rogerson, C. M. (1997). Periodic markets and rural development in South Africa. *Africa Insight*, 27(2), 98-111.
- Rozelle, S. et, al., (2003). Continuity and change in China's rural periodic markets. *The China Journal*, (49), 89-115.
- Scott, E. P. (1972). The spatial structure of rural northern Nigeria: farmers, periodic markets, and villages. *Economic Geography*, 48(3), 316-332.
- Skinner, G. W. (1964). Marketing and social structure in rural China, Part I. *The Journal of Asian Studies*, 24(1), 3-43.
- Skinner, G. W. (1965). Marketing and Social Structure in Rural China Part II. *The Journal of Asian Studies*, 24(2), 195-228.
- Smith, R. H. (1979). Periodic market-places and periodic marketing: review and prospect. *Progress in Geography*, 3(4), 471-505.
- Ssabavuma W.(2008) The Role of Periodic Markets in Enhancing Rural Development in Butambala County; Mpigi District. A Masters Desertation. Makerere University.
- Stine J.H (1969). Temporal aspect of tertiary production elements in Korea. In F.R,Pitts(ed) *Urban System and Economic Development*, University of Oregon, School of Business Administration, p. 68-88

- Tacoli C. (2004). Rural-Urban Linkages and Pro-Poor Agricultural Growth. An Overview. Paper prepared for OECD DAC POVNET Agriculture and Pro-Poor Growth Task Team. Helsinki Workshop.
- Velayudhan, S. K. (2016). Relevance of Rural Periodic Markets: A Review. Indian Institute of Management. Kozhikode. working paper No. 199 of 2016.
- Wambugu, S. K. (1995). A spatio-temporal analysis of periodic markets in Nyeri District, Kenya. *Eastern and Southern Africa Geographical Journal*, 6(1), 60-73.
- Wanmali, S. (1980). The Regulated and Periodic Markets and Rural Development in India. *Transactions of the Institute of British Geographers*, 5(4), 466-486.
- Webber M.J and Symanski R.(1973). Periodic Markets and Economic Locational Analysis. *Economic Geography*.39(1),213-227.

APPENDIX I

Introduction letter to respondents

I am a postgraduate student at the department of geography and Environmental Studies; University of Nairobi. I am undertaking an academic research on the role of periodic markets in rural development of Mukaa Sub County. I have chosen this market and you as an important source of information that will be used to lay strategies for development in the area. You are kindly requested to provide answers to the stated questions to the best of your knowledge. Don't give your name or any other identification details. Your cooperation will be highly appreciated.

Thank you.

APPENDIX II

Questionnaire for traders

Instructions:

- Don't write your name
- Tick (✓) the box against the statement that relates to your answer
- Give statements in the category of open questions

SECTION A:

Name of the market

Nature of goods sold

1. Gender

i. Male

ii. Female

2. What is your highest level of education attained as described by the categories below

i. Primary and below

ii. Secondary level

iii. Beyond secondary level

SECTION B:

3. Which of the following markets do you attend in a week?

a) Kiu

b) Salama

c) Nunguni

d) Ulu

e) Sultan hamud

f) Kasikeu

g) Kima

4. If you decide to attend all of the following markets in their order from Monday to Sunday? How much will it cost you for transport?

from	Kiu	Ulu	Nunguni	Salama	Sultan	Kasikeu	Kima
to	Ulu	Nunguni	Salama	Sultan	Kasikeu	Kima	kiu
cost							

5. How can you rate the cost of transport?

- i. Very cheap
- ii. Cheap
- iii. Expensive
- iv. Very expensive

SECTION C:

6. Which means of transport do you use to visit this market?

.....

7. What challenges do you face during marketing in the seven markets?

.....

8. If given a change to choose the best day for this market, which is your favorite day?

.....

9. Give a reason for the day given above

.....

Thank you for participating in this research.

APPENDIX III

Questionnaire for shoppers

Instructions:

- Don't write your name
- Tick (✓) the box whose statement describes your answer
- Use words to provide additional information for the open questions

SECTION A:

1. Name of the market
2. Gender
3. Is this market your home market? (Tick only one box)
Yes No
4. If your answer above is "NO", which is your home market?
.....
5. Which of the following items have you ever bought from this market
 - a.) Clothes/shoes
 - b.) Radio/woofer
 - c.) Mobile phone
 - d.) Television(TV)
 - e.) Utensils(kitchenware)
 - f.) Solar panel and bulbs
 - g.) Farm inputs/equipment
 - j.) Tooth brush and tooth paste
 - k.) soapOthers.....
.....

6. Which of the following facilities do you access in periodic markets?

i. Health care facilities

ii. Water points

iii. Administration offices

iv. Church/Mosque

SECTION B:

7. What do you think can be done to improve the state of trading in this market?

.....
.....

8. What types of employment activities do people engage themselves in this market?

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Thank you for participating in this research

APPENDIX IV

Interview guide questions for market officials

1. Name of the market
2. For how long have you worked in this market?
3. Do you work alone here or there are other officials? (Give number)
4. In your time of stay, what can you say is the average number of traders in this market during a market day?
5. How many individuals in this market can you identify as casual labourers?
6. Which other employment opportunities do residents of this area find in this market during market days?
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7. What are the challenges faced by traders in this market?
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Thank you for your time.