CONTRIBUTION OF RURAL ELECTRIFICATION PROJECT ON SMALL SCALE BUSINESS VENTURES UNDERTAKEN BY WOMEN IN THURDIBUORO LOCATION, KISUMU COUNTY, KENYA

BY

DIGO HOPE ADHIAMBO

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SCHOOL OF ARTS AND SOCIAL SCIENCES

MASENO UNIVERSITY

ABSTRACT

In Kenya, electricity is used as a conduit to facilitate poverty eradication by lighting up the rural and marginal areas thus making such areas to be conducive for small and medium business ventures. A closer scrutiny of small scale business ventures undertaken by women in Kisumu County reveal that contrary to the expectation of social and economic transformation as a result of availability of electricity in rural areas, much is yet to be achieved since small scale businesses are still operating under difficult conditions. The constraints that impede small scale business ventures are numerous. It is on the basis of this that this study has been initiated in order to examine contributions of rural electrification project on small scale business ventures undertaken by women in Thurdibuoro Location, Kisumu County. The specific objectives of the study were; to examine small scale business ventures undertaken by women in Thurdibuoro Location, to identify the contribution of rural electrification project to women business initiation and status in Thurdibuoro Location, to establish socio-economic factors determining women access to rural electrification in Thurdibuoro Location and to examine the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location. Cross-sectional descriptive survey design was adopted as a blue print to guide the study. The target population of the study was about 10,117 women undertaking small scale business ventures in Thurdibuoro Location. The sample size of 390 respondents was selected based on Yamane (1967) as described by Glenn (1992). Systematic random sampling technique was applied in identifying the respondents. Primary instruments used for data collection included questionnaires, key informant interview guide and focus group discussions guides. Quantitative data was analyzed using descriptive statistics and presented in form of frequencies and percentages. Qualitative data was transcribed, organized into various emerging themes and reported narratively. The findings of the study were; the most dominant business ventures which mushroomed as a result of availability of electricity were salons and shop keeping at 14.3% each among other types of business ventures, on business ownership, 85.8% of women started their business with the advent of rural electrification, 57.1% of respondents responded positively towards Rural Electrification Project (REP) as a cornerstone to empower them to venture into business, 81.0% respondents agreed that presence of electricity had positively impacted on quality of education and 52.4% respondents appreciated the role of electricity in provision of better health services, 47.6% of respondents agreed that introduction of electricity had impacted on their businesses with 90.4% increasing their asset base and 78.8% agreed that availability of electricity had increased business hours. The study concluded that majority of small scale business ventures were initiated courtesy of availability of electricity, majority of women undertaking small scale business ventures responded positively towards REP, availability of electricity increased sales and income hence impacted positively on the livelihood of women respondents. The study recommended that Rural electrification project should be extended to cover remote rural areas, should be domesticated to authenticate its reliability and affordability so as to continue tapping its fundamental role of supporting the initiation of small scale business ventures and should be intensified to facilitate extension of business hours in order to facilitate the widening of business opportunities and market choices for entrepreneurs with a view of transforming rural areas into a 24-hours market economy. The research findings contributed towards filling the gap identified by examining how electricity services facilitated the increase in income of micro-enterprises in rural areas and finally contributed to poverty reduction.

CHAPTER ONE

INTRODUCTION

This chapter presents the background of the study, statement of the problem, research objectives and questions, the significance of the study, the scope of the study, limitations of the study and basic assumptions of the study.

1.1 Background of the Study

The important role that small scale business ventures play in stimulating economic activity, creating jobs, alleviating poverty and uplifting living standards, has been recognized internationally(Van Vuuren and Groenewald, 2007). Over the last ten years, small and medium enterprises have been a force in job creation, innovation and economic development. Many of these Small and Medium Enterprises (SMEs) are women owned or operated. Self employment and women entrepreneurship have been growing in less developed economies, as means for women to survive themselves and often times to help support their family. Hence it can be seen that women entrepreneurship is a growing phenomena and has had a significant economic impact in all economies (Kibas, 1999).

In the United States of America (USA), the role assigned to small scale business ventures for economic growth and development has made most of her economy to adjust their developmental concept and plan and see new enterprise development as very vital to their economic problems. For instance, the analysis of gender creative businesses shows that the rate of growth of women–owned businesses is twice that of men and this comprises more than 35% share of all entrepreneurial ventures. They generate over $2.3 trillion in annual revenue, and employ 18 million individuals (Bartol and Martin, 1998). Entrepreneurship as the engine of economic growth and wheel that pedal the vehicle of economic development has been recognized for its importance in the area of job creation, revenue generation, poverty alleviation and wealth creation, even during these trying economic times. This concept is now identified as the central element in the theory of economic development (Schumpeter, 1934) and it makes up the largest business sector in economies. It has been recognized as the driver of employment and economic growth (Culkin and Smith, 2000).

In the United Kingdom (UK), it is reported that top performing women are walking out of the world best known companies at the pinnacle of their careers to become small scale business ventures*(http:// www. realbusiness.co.uk/news/what's behind female brain drain* ,1st July,2013). However in their journey into entrepreneurship, UK women face serious obstacles. Women feel it harder to access financing. They also find it harder to pitch to venture capitalist. According to Cater, (2006) there is unequivocal evidence that women businesses in UK start with lower levels of capitalization, lower ratio of debt finance and are much less likely to use private equity or venture capital. GEM (2007) report on Women and small scale business ventures postulates that women in UK tend to be less optimistic and self confident than men about starting business, women are significantly more fearful than men of debt and fear of failure is also higher for women compared to their male counterparts.

In Peru, SMEs today comprises of 98% of all business and women owned and operate over 40% of them (GEM, 2007). Collectively, these businesses generate half of Peru's GDP and play a pivotal role in the livelihood of millions of workers and their families (*www: Havard.educ/document/11053.peru. Wed. 1st July, 2013)*. Peru is one of the two countries in the world in which women are more likely to start a business than men (GEM, 2007). The entrepreneurial spirit among the Peruvian women is at par with that of women in much richer and more egalitarian countries, such as Sweden and Switzerland. Moreover, women in Peru own and operate a significant higher percentage of business than do women in other Latin American countries (GEM, 2007).

In Chile, a developing country, the growth in trial number female entrepreneurs outnumbers male entrepreneurs (Maas and Herrington, 2006). This led to the renewed focus on gender entrepreneurship and the development of appropriate entrepreneurship interventions for gender-specific groups internationally. The estimation is that there are 513 000 women entrepreneurs, which is 33% of all entrepreneurs and has increased from 20% three years ago (Maas and Herrington, 2006). The estimate is that by 2010 female entrepreneurs in Chile was equal the male entrepreneurs and created more than 50% of the jobs in new enterprises. Similarly, Maas and Herrington (2006) indicate that Canada has experienced a 200% growth in the number of women entrepreneurs over the last 20 years.

In Nigeria, women account about 50% of the nation's population yet their participation in developmental issues is very low. Ayogu (1990) opined that women are groaning under retrogressive culture, beliefs and overbearing influence of a male dominated society especially in Nigeria where women are denied access to land ownership. In this regard, Mazrui (1991) examined the marginalization and dispossession of women in general and Nigerian women in particular. He highlighted the categories of sexism that oppress women. The principles guiding the ownership of economic resources like land and property strengthened the stereotype of men dominated society in which women are suppressed or downtrodden. Similarly, Weeks (2001) opined that women entrepreneurs play an increasingly important role in promoting economic growth and development. To ensure this role is accomplished, most of them rely on predatory moneylenders because of the problems they encounter in accessing credit from the formal financial institution in Nigeria (Iheduru, 2002).

In Uganda, although women constitute a little over one half of the population, they rank lower than men in almost every social indicator in the country. However despite this, female small scale business ventures are increasingly prominent as employers, customers, suppliers and competitors in the global community. More than one third of the people involved in entrepreneurial activity are women (GEM, 2004). Women entrepreneurial development is impeded by specific constraints such as limited access to key resources (including land and credit), the legal and regulatory framework and socio-cultural environment.

In Kenya, there is significant difference in performance of women enterprises vis-à-vis those of Kenyan men. Their enterprises are smaller, less likely to grow, less profitable and begin with less capital investment than those owned by men (MCcormick, 2001). According to the 1999 National SME baseline survey there were 612,848 women in SME in Kenya accounting for 47.7% of all the SMEs. The result shows that women tended to operate enterprise associated with traditional women roles such as food processing, beer brewing, hair dressing, dress making and retail of second-hand clothing. Mccormick (2001) noted that apart from gender segregation by sector, women and men operate from different locations. Men are

most likely to locate their businesses in trading centres and commercial districts while women mostly operate from home (MCcormick, 2001).

In Kisumu county, small scale business ventures initiated by women are crucial for broader development objectives including economic development and growth. However many female entrepreneurs are operating in more difficult conditions than male entrepreneurs. A closer scrutiny of small scale business ventures undertaken by women in Kisumu county reveal that contrary to the expectation of social and economic transformation as a result of availability of electricity in rural area, much is yet to be achieved since small scale businesses are still operating under difficult conditions. The constraints that impede small scale business ventures include; political instability, poor infrastructure and access to and cost of electricity. This makes it necessary to carry out a research that will investigate and establish the contribution of rural electrification project on small scale business ventures undertaken by women in Thurdibuoro Location, Kisumu county.

1.2 Statement of the Problem

In Kenya, electricity is used as a conduit to facilitate poverty eradication by lighting up the rural and marginal areas thus making such areas be conducive for small and medium business ventures. Electricity empowers women by extending business hours thus enabling them to increase their income through operating their business for longer hours. Numerous business ventures mushrooming in the rural areas facilitated by the initiation of rural electrification project have become more of a way of life and engine of economic transformation among the rural poor. It offers hope for the disadvantaged members of the society, the majority of whom are women. As they engage in micro enterprises, they operate under what has come to be known as the informal sector, a sector with near nil government regulations and policies. In Kisumu county, it is fairly evident that women appear to be marginalized especially with regard to mainstream entrepreneurship. The cultural belief that women belong to the kitchen is still strong, women in Kisumu county therefore have to contend with cultural, social, economic and environmental challenges to go into business.

Fostering entrepreneurship development is crucial for the achievement of Kenyans' broader development objectives including economic development and growth. However, many female entrepreneurs are operating in more difficult conditions than male entrepreneurs. The constraints that impede all entrepreneurs are political instability, poor infrastructure and high production cost and non-conducive business environment which tend to impact more on women than men. In addition, women entrepreneurial development is impeded by specific constraints such as limited access to key resources (including land and credit), the legal and regulatory framework and socio-cultural environment.

In Kisumu county, despite the extensive grid network reaching majority of towns along major roads, access to electricity by the rural poor households remains a pipe dream. For decades, strategies for increasing the rate of new connections to cover upcoming towns and households have engaged the minds of researchers, policy makers, and politicians. Most of the residents of Thurdibuoro Location-dominated by women (180,083) compared to men (170,270) (Population and Housing Census, 2009) received the Sondu- Miriu hydroelectric power project, a Rural Electrification Project (REP) initiated by the Government to boost the energy grid, with mixed feelings. Some residents thought it was a curse because people were displaced from their ancestral lands; forests which the residents relied on for economic well-being were also cleared to pave way for construction of the site. As a result, majority of Thurdibuoro Location residents who heavily relied on farming as a means of livelihood were left with no parcels of land for cultivation. This move left residents of Thurdibuoro Location vulnerable with no means of livelihood thereby pushing them to engage in small scale business ventures for survival. This study therefore sought to establish the effect of rural electrification project on small scale business ventures undertaken by women.

1.3 Objectives of the Study

The general objective of the study was to examine effects of rural electrification project on small scale business ventures undertaken by women.

Specific Objectives

1. To identify small scale business ventures undertaken by women in Thurdibuoro Location.
2. To examine the contribution of rural electrification project to women business initiation and status in Thurdibuoro Location.
3. To establish socio-economic factors influencing women access to rural electrification in Thurdibuoro Location.
4. To examine the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location.

1.4 Research Questions

The study sought to answer the following research questions;

1. What are the small scale business ventures undertaken by women in Thurdibuoro Location?
2. What contribution does Rural Electrification Project play in promoting women business initiation and status in Thurdibuoro Location?
3. What are the socio-economic factors influencing women access to rural electrification in Thurdibuoro Location?
4. What is the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location?

1.5 Justification of the Study

It was hoped that the research findings and explanations would provide a better understanding to entrepreneurs, modern energy suppliers, policy makers and other modern energy stakeholders on the linkages and impact of electricity services on micro enterprises or income ventures. Findings were further expected to facilitate and stimulate the productive uses of grid electricity for increasing income and consequently reduce poverty. Furthermore,

the research was aimed at contributing towards filling the gap identified by examining how electricity services may or may not facilitate the increase in income of micro-enterprises in rural areas and finally contribute to poverty reduction. It was believed that the availability and reliability of information from the study could enable decision-makers, government, donor organizations and other energy stakeholders to support efforts to increase accessibility of electricity for informal sector. It could also stimulate the rural poor who depend much on micro-enterprises as a source of their income to improve their business plan and use electricity services productively.

1.6 Scope and Limitations of the Study

The study was delimited to examining effects of Rural Electrification Project on women undertaking small scale business ventures. The study was carried out in Thurdibuoro Location, Nyakach constituency, Nyanza Province in Western Kenya. The study would most likely face the following constraints; low response rate to questionnaires and unwillingness of some respondents' participation in the study by not availing adequate information required in the questionnaires. The researcher would overcome these constraints by training the research assistants on the necessary skills of administering questionnaires to boost their response rate. These include; briefing respondents on the relevance of the study and how findings of the study would be beneficial.

1.7 Assumptions of the Study

The study was conducted based on the following assumptions;

The sample chosen for the study was a true representation of the entire targeted population. Respondents chosen for the study were honest while filling in the research instruments by giving accurate information. The numbers of females found in each of the three sub-locations in Thurdibuoro Location represented those of mature age who were capable of undertaking business activities.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses literature related to rural electricity and its effects on women entrepreneurs based on: small scale business ventures, women business initiation and status, socio-economic indicators and business hours and efficiency. It also highlights the theory upon which the study is inclined to and the conceptual framework which assist in establishing linkages among the variables of the study.

2.2 Rural Electrification Project and Small Scale Business Ventures

In many developing countries, a large percentage of the population are poor and live in rural areas where there is substantial lack of basic amenities like potable water, good roads, electricity and health facilities . In most cases, these rural dwellers depend on adjoining streams to meet their water needs, have to trek for long distances in search of traditional biomass to meet their energy needs, and cater for their health needs using traditional methods. The lack of these amenities poses a barrier to the reduction in the level of rural morbidity, mortality, and improving the living standard of the poor. Concerned about the low standard of living in many developing countries, in 2000, the United Nations established the Millennium Development Goals (MDGs) and set targets to improve the standard of living of the world's poor (UN, 2002).Although not part of the MDGs, access to clean and affordable energy, especially electricity, is necessary if the MDGs are to be met. For example, to achieve universal primary education, electricity is needed for good lighting for reading in homes and to power some teaching aids; to reduce child mortality and improve maternal health, electricity is needed in health facilities to power refrigerators for preserving drugs and vaccines etc.

Empirical studies conducted by Meisen & Akin, 2008 revealed that there is a high correlation between the level of electricity consumption and human development index. Given the critical role of access to electricity in meeting the MDGs and ensuring the development of rural areas, many developing countries strive to provide electricity to their populace. In

Kenya, successive governments at the different tiers have tried to provide electricity using rural electrification programmes which involves extending the existing distribution lines to rural communities. Such programmes have huge potential benefits because the availability of electricity and other basic amenities can increase the productivity and profitability of existing small scale business ventures in the rural areas, and also reduce the barrier to the creation of new small scale business ventures which consume electricity in their operations for example grain milling, tailoring shops, welding shops, hair salons etc (Kooijman-van Dijk& Clancy, 2010; Nichter & Goldmark, 2009) which in-turn may increase the available disposable income that may be used to improve the standard of living.

Cabraal *et al.*, (2005) noted that access to electricity has a significant impact in rural development only when it is used efficiently and on income-generating activities. However, these potential benefits may not be derived since rural electrification through extension of the distribution lines does not necessarily translate to availability of electricity, especially given the larger problem of low electricity generation capacity and high transmission and distribution losses faced by the Kenyan electricity sub-sector. Despite the prevalence of this rural electrification approach in Kenya, very little has been done to ascertain its impact on the socio-economic situation in rural areas. This study intends to examine how connection to grid-electricity has impacted small scale business ventures in rural areas in Thurdibuoro Location, Kisumu county. The result of the study will bridge the knowledge gap in this area and also provide policy makers useful suggestions on maximizing the potentials of rural electrification in rural development in the region.

2.3 Rural Electrification Project and Women Business Initiation and Status

The improved financial condition of rural households and consequential economic welfare is often described as a key element of rural development and a precondition for poverty alleviation. The fostering of economic circles as a basis for rising household incomes is one of the benefits most often related to the arrival of electricity in rural areas. On the one hand, rural electricity supply is held responsible for the development and increased productivity of decentralized rural industries and businesses offering employment and income for rural

populations, more so for women who are the majority in rural areas. On the other hand, bureaus, shops, salons, grocers etc are common phenomenon in rural areas of developing countries. These cottage industries are stimulated and can benefit from increased productivity, courtesy of the reliable rural electricity supply. Furthermore, higher agricultural production by the use of machinery and electric appliances (e.g. water pumps) can contribute to a rise of women income.

Barnes (1988) summarized in his classic study 'Electric Power for Rural Growth' that "rural electrification does have a significant impact on rural industry and commerce". Comparing studies from India, Indonesia and Colombia, he points out that electricity may be a key factor for the establishment and survival of rural businesses. Comparing areas with and without electricity, Barnes found that the number of businesses was generally higher in areas with electricity compared to non-electrified areas. Furthermore, electricity supply seemed to lead to a higher demand for business and industrial labour. Carrasco *et al.,* (1987) came to similar insights regarding the increase of industries after the introduction of electricity supply in rural Peru. Besides industries that already existed before electrification and used the newly provided energy led to be more productive, there were also incidences of new productive activities due to electricity supply.

In Bangladesh, Barkat (2004) analyzing the data of a broad impact study on the national rural electrification programme found out that more than 40% of all households with electricity reported that electric power in their household had somehow influenced an increase in income. Additionally, most households stated that the availability of electricity outside of their household (e.g. in industries) had positive influence on their household income. Electrified industries generated on average eleven times more employment than the non-electrified ones. The employment situation especially for women had increased significantly (Barkat *et al.,* 2002).Turnover in electrified retail shops was two times higher than in non-electrified shops. This was mainly due to longer opening hours in the evening, attraction of more customers and better availability of goods and services in electrified markets (Halim, 2005).

2.4 Rural Electrification Project and Socio-economic Factors

Energy development has generally benefitted urban users much more than rural communities. Many people and especially the rural folk do not have access to energy in the quantity and form they need to satisfy their basic household and productivity needs, and so they remain in poverty. Problems with access to energy are greatest in the rural areas where electrical power is insufficient. This is often a gender issue, as men increasingly migrate to urban areas in search of employment. Additionally, women tend to be the most affected by lack of electricity, being required to substitute physical labour to accomplish their household tasks (IAE, 2011; Branco, 2002).Other gendered perspectives on energy use involve differing uses for energy sources. For example, men tend to view the benefits of electricity in terms of leisure, quality of life and education for children; while women see it as a way to reduce workload, improve health and reduce expenditure. Women are generally responsible for household energy provision and use, while men tend to make the decisions concerning energy sources that are purchased. For example batteries which are required in areas without electricity are very expensive for poor rural households, and are often used for luxury items such as radios and televisions rather than for labour-saving appliances thus continuous use of biomass (Clancy *et al.,* 2003; and McDade and Clancy, 2003).

Women with a high level of education are more likely to engage in small scale business ventures. Also women with more experience, higher level of education, more knowledge of the market and business practice are more likely to be able to identify opportunities for starting new business ventures (Wit and Wilden, 1989). On the other hand, it may be expected that women with low level of education have more difficulties finding a paid job and therefore see no other possibility than engage in entrepreneurship. Most women enter into micro-entrepreneurship out of economic necessity and lack of employment options. Hence highly educated women are likely to pursue opportunity based ventures, while less educated women are more involved in necessity entrepreneurship (Bhola *et al.,* 2006). Education therefore plays a central role in identifying, assimilating and absorbing new knowledge (Knusden *et al.,* 2000). Formal education may provide prior mental programming which is positively correlated with venture start-up success (Vesper, 1990). Knowledge and

experience play an important role in identifying opportunities (Cohen & Levinttal, 1990).To identify an idea and recognize an opportunity in a specific field; one must be knowledgeable about the domain and have a solid understanding of the knowledge base.

Prior knowledge plays an important role in recognizing opportunities (Shane, 2000). A woman's background in a certain industry may enable her recognize more entrepreneurial opportunities in that industry than those women with less background in the industry. Knowledge and skills obtained from prior training in a certain industry could create a knowledge bank and help individuals' identify opportunities relevant to their field (Hayek, 1945).This also applies to Thurdibuoro Location where women with education or some exposure can identify new business opportunities which can spring up as a result of the availability of electricity and go for them as opposed to women with little education and lack of exposure.

2.5 Rural Electrification Project and Women Business Hours and Efficiency

Due to improved lighting, people can go to bed later at night gaining additional time for different activities after sunset. This especially applies for developing countries, as most of them are located within the tropics where early sunsets occur throughout the whole year. Advocates of rural electrification often mention activities such as studying, working, productive activities, social visits and entertainment benefiting from an increased day length (Barnes, 1988).Barnes cited that it was found in many previous studies that electric lighting extends the day of rural households by two to three hours. Interestingly, he himself stated for the Colombia case, that people in electrified households went to bed only about 20 minutes later than they did before electrification. However, men and women had greatly altered their living patterns to accommodate television viewing in the evening, substantially reducing the time for other activities of adults such as reading, productive activities, social visits, and radio listening. In Peru, Carrasco *et al.,* (1987) stated that after gaining access to electricity people tended to stay up at least two hours longer than before. The extended time was used for activities that could only have been accomplished earlier with great effort under the light of a kerosene lamp or candle, such as separating seeds or reading and studying.

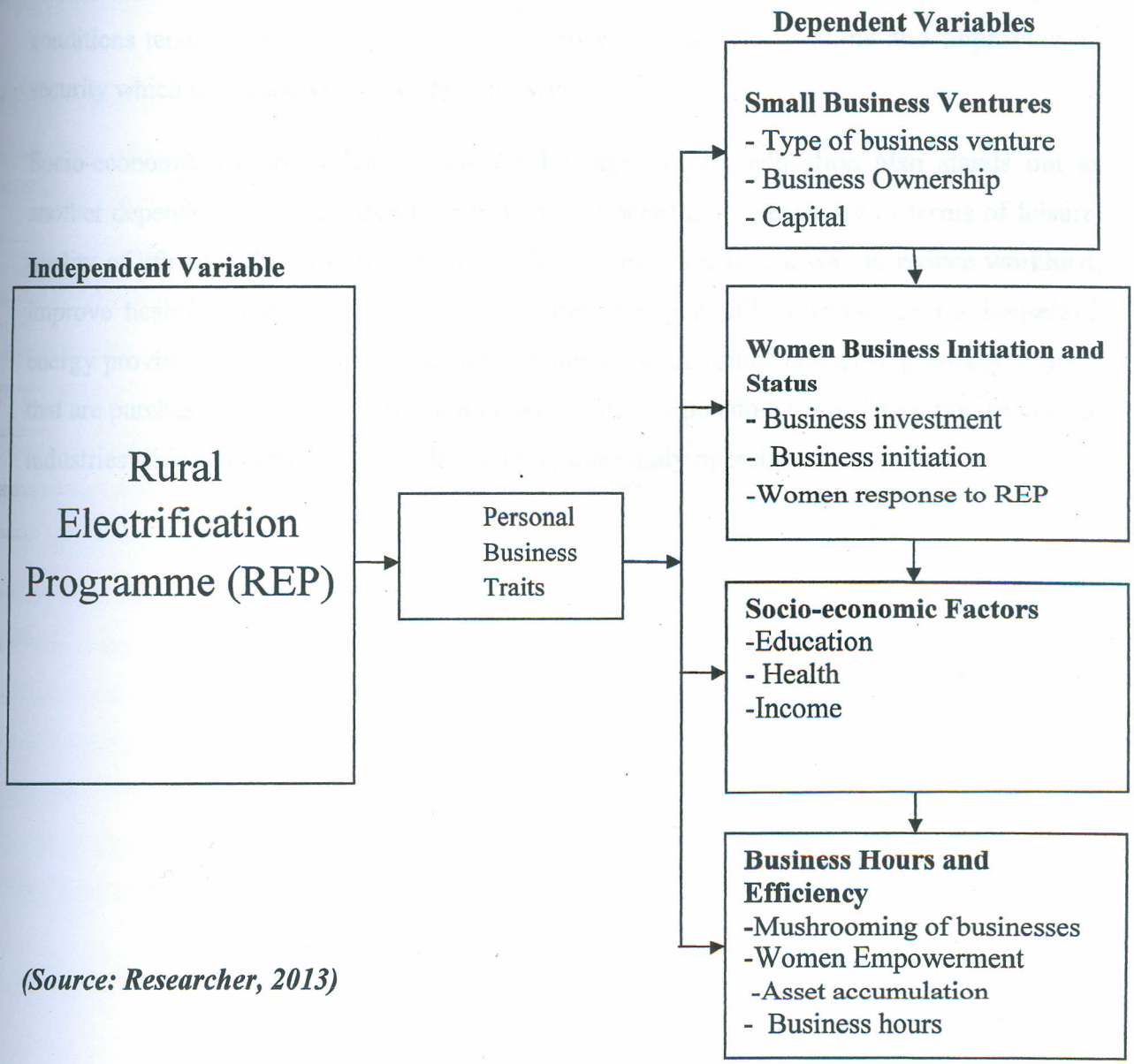
Barkat *et al.,* (2002) mentioned an extended time between sunset and sleep of up to one hour for members of electrified households in Bangladesh. The most dominant activities during this time were stated as watching TV and listening to the radio or extending their business hours. The study of Wamukonya *et al.,* (1999) revealed for Namibian households that the day of household members extended by about 1.5 hours due to electrification. The main activities during this time were stated as watching TV (all household members), reading (children), and socializing (adults). Dube, (2001) as cited in Karekezi & Majoro, (2002) suggests that the security lighting on high-masts poles in poor urban areas of South Africa has resulted in the urban poor setting up small enterprises in the evenings. Similarly, the Nairobi City Council in Kenya has embarked on a program to repair and install streetlights along the inner roads, walkways and slums with a view to relocating hawking businesses from the congested central business district into the outer parts of the city. Installation of streetlights has increased visibility, attracted more customers, improved security and extended the hours of operating businesses into the night, thus improving sales and profitability (Kirubi, personal observation, July 2005; *Daily Nation,* 12/16/2005).

It seems to be without controversy that access to electrification, and there with improved lighting conditions, lead to extend hours of activity between sunset and bedtime and improving on security which is conducive for business growth. Nevertheless, the benefits from this additional time are highly dependent on the respective activities performed during this time period. Television seems to be an important pastime taking in a significant portion of this extra time in most rural areas of developing countries. Furthermore, in most cases the evening hours are also used for increased productive activities by adults and the studying of children.

2.6 Conceptual Framework

A conceptual framework is a diagrammatic explanation of the research problem hence an explanation of the relationship among several factors that have been identified as important to the study (Ngechu, 2006).

Figure 2.1: Conceptual Framework showing the interplay among various variables used in the Study:



(Source: Researcher, 2013)

The schematic diagram Figured 2.1, verbalizes the interplay among various variables used in the study. Rural Electrification Programme (REP) stands out as an independent variable. Dependent variables of the study include; Women business status and income.The fostering of economic circles as a basis for rising household incomes is one of the benefits most often related to the arrival of electricity in rural areas. On the one hand, rural electricity supply is held responsible for the development and increased productivity of decentralized rural industries and businesses offering employment and income for rural populations, more so for women who are the majority in rural areas. Access to electrification with improved lighting conditions tends to extend hours of activity between sunset and bedtime and improving on security which is conducive for business growth.

Socio-economic factors which include gender, age, health, education also stands out as another dependent variable. Men tend to view the benefits of electricity in terms of leisure, quality of life and education for children; while women see it as a way to reduce workload, improve health and reduce expenditure. Women are generally responsible for household energy provision and use, while men tend to make the decisions concerning energy sources that are purchased. Rural electrification project is also responsible for the initiation of cottage industries which directly consume electricity in their daily operations.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that was followed so as to fulfil the study objectives. These include; the research design, area of study, study population, sample size and sampling techniques, data collection instruments and tools, data collection procedures and data analysis techniques.

3.2 Research Design

The study adopted the use of cross-sectional descriptive survey research design with both qualitative and quantitative approaches. Cross-sectional descriptive survey design is a method of collecting information by interviewing or administering questionnaires to a sample of individuals hence suitable for extensive research. It is an excellent vehicle for the measurement of characteristics of large population (Orodho, 2003). It maintains a high level of confidentiality, it is convenient and enables data to be collected faster, enables questions to be asked personally in an interview or impersonal through a questionnaire about things which cannot be observed easily. It also gives the study an opportunity to get accurate view of respondents to issues as well as test theories on social relationship at both the individual and group level (Kothari, 2003). Cross-sectional descriptive design is appropriate for the study because it enables the collection and analysis of both qualitative and quantitative data. Cross-sectional descriptive design was suitable for this study as the questionnaires for women entrepreneurs was designed to collect both qualitative and quantitative data. The focus of the study was small scale business ventures undertaken by women in Thurdibuoro Location. The unit of analysis was individual business women while the sampling units were West Koguta, Upper Kadiang'a and Anding'o Opanga sub-locations of Thurdibuoro Location.

3.3 Study Area

The study was carried out in Thurdibuoro Location, Nyakach Constituency, Kisumu county in Western Kenya. It lies within longitudes 34.91667E and 34.55E and latitudes -0.333333S and 0.20S. The main economic activities are farming, livestock keeping and fishing. The district is generally underdeveloped with a larger part receiving low rainfall; hence being dry. Thurdibuoro Location is among the six locations of Upper Nyakach. It consists of three sub-locations namely West Koguta, Upper Kadiang'a and Anding'o Opanga. The area occupies 54.3sq km with an estimated population of 19,333 of which 9,216 are male and 10, 117 are female (Population and Housing Census, 2009).

3.4 Study Population

The study targeted all women undertaking small scale business ventures in Thurdibuoro Location. The total number of small scale business ventures in women dominated industries in Thurdibuoro Location were 10, 117 (Nyando District Council Report, 2013).

3.5 Sample Size and Sample Selection

Based on Yamane (1967) as described by Glenn (1992) standardized table for sample size selection, a target population of 10,117 have a complete representation of 390 respondents as its sample size at 5% precision (See Appendix IV).

According to Nyando District Council Report (2013), Thurdibuoro Location consisted of three sub-locations namely West Koguta, Upper Kadiang'a and Anding'o Opanga.The researcher used Population Proportional to Size (PPS) method in selecting samples from each sub-location as shown in Table 3.1. Population Proportional to Size method enabled the researcher to select sample size based on the numerical strength of each characteristic of respondents.

Population Proportional to Size (PPS) formula:

$$PPS = \frac{\text{Population per sub-location X Sample size}}{\text{Total Population}}$$

West Koguta = 5637*390/10,117 = 217

Upper Kadiang'a = 2356*390/10,117=91

Anding'o Opanga = 2124*390/10,117 = 82

Table 3.1Sub-Locations in Thurdibuoro Location

Sub-Locations Population	Frequency	Sample Size
West Koguta	5637	217
Upper Kadiang'a	2356	91
Anding'o Opanga	2124	82
TOTAL POPULATION	**10,117**	**390**

Source: Data from field, 2013

3.6 Data Collection Method/ Instruments of Data Collection

The main research tool used for collecting data consisted of a structured questionnaire with both closed and open ended questions. The questionnaire was administered to registered women undertaking small scale business ventures in Thurdibuoro Location. The questionnaire was organized into sections which captured the research objectives and answered all the research questions. Section one captured in formation related to

demographic characteristics of respondents. Section two sought information related to small scale business ventures undertaken by women in Thurdibuoro Location, section three captured information on impact of rural electrification on business initiation and status. Section four looked at socio-economic factors influencing women access to rural electrification. Finally, section five sought information related to the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location.

3.6.1 Pilot Testing

According to Mugenda and Mugenda (2003), a pre-test sample of a 1/10th of the total sample with homogenous characteristics is appropriate for the pilot study. The researcher selected 39 women entrepreneurs' equivalent to 10% of the targeted study population from neighbouring sub locations to Thurdibuoro Location for pilot testing. According to Mugenda and Mugenda (2003), subjects in the actual samples should not be used in the pre-test. Questionnaires were administered to the selected women undertaking small scale business ventures in the neighbouring sub-locations to Thurdibuoro Locations. Pilot testing was important in the research process because it helped the researcher to identify vague questions and unclear instructions. It helped the researcher to capture important comments and suggestions from respondents that enabled the researcher to improve on the efficiency of the instrument. The pilot test also helped the researcher in enhancing the reliability of the instrument as consistent measures of the concept being studied were determined. Through the pilot study, other common responses were captured and included in the tool. The data collected during pilot testing was prepared, analyzed and interpreted thus led to further review of the instrument in readiness for the main study data collection phase.

3.6.2 Validity of Research Instruments

Validity of research instruments is the measure of the extent to which the instruments measure what they are intended to measure (Kathuri and Pals, 1993). A research instrument is valid if it actually measures what it is supposed to measure and when the data collected through it accurately represents respondents' opinions (Amin, 2005). The validity of the

research instruments was ascertained by conducting a pilot study. This ensured that the instructions were clear and all possible responses to a question were captured. The researcher ascertained the validity of the research instruments by studying the responses to the questions by respondents to determine whether respondents got the same meaning out of the questions. Content validity of a measuring instrument is the extent to which it provides adequate coverage of the investigative questions guiding the study. In this study, content validity was determined through consultation with the research supervisors within the university. The university supervisors' reviewed the instrument, recommended corrections and verified whether the instruments addressed the objectives of the study or not.

3.6.3 Reliability of Instruments

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda and Mugenda, 2003). The researcher adopted split half technique of assessing reliability because it required only one testing session. This technique was also preferred because it eliminated errors due to the respondents ease in remembering responses from the first test, a common phenomenon in test-re-test technique. The split half technique overcame this problem by developing one scale for each variable and then dividing the scale into two halves (odd and even) which were scored separately for each respondent. Since split half procedure was based upon a correlation between scores obtained on only half the test, a correlation was needed to determine the reliability of the entire test. The Spearman Brown Prophesy formula was used to make corrections as follows:-

$$R = \frac{2r}{1+r}$$

Where **R** is the corrected reliability coefficient

r is the reliability coefficient from original calculation

If the correlation coefficient ranges from 0.6 to 0.8 then the two sets of scores i.e odd and even scores are related (Dalen, 1979).

3.7 Data Collection Procedures

In order to collect data from the target respondents, the researcher needed an introductory letter from the University and a permit from the National Council of Science and Technology. Due to the expansive coverage area, the researcher recruited 3 research assistants to assist in data collection. The researcher trained the 3 research assistants on how to administer the instruments.

3.7.1 Primary Data Sources

The researcher and research assistants interviewed respondents with the aid of primary instruments. The primary research instruments used in the study included: questionnaires, key informant interview guides, and focus group discussions guides.

3.7.1.1 Questionnaire

A Questionnaire is a research instrument that is used to gather data over a large sample and diverse regions. It upholds confidentiality, saves time and has no interviewer bias (Tromp and Kombo, 2006). The structured questionnaire had closed ended questions. Questionnaires were used to find out the contribution of rural electrification project on small scale business ventures undertaken by women. Questionnaires were filled by 390 sampled women undertaking small scale business ventures in Thurdibuoro Location, Kisumu county. The questionnaire was organized into sections intended to extract specific information from respondents on the phenomenon under study. In order to boost the instruments' return rate, the researcher and the research assistants interviewed respondents and filled the research instruments in person, made the research questions concise and precise, explained the purpose of the study to respondents before data collection and assured participants of total confidentiality. Data collected were coded and prepared for analysis. Before data entry, questionnaires were checked for completeness and data cleaning was done to enhance data quality.

3.7.1.2 Key Informant Interview Guide

An interview guide is a list of questions or topics that need to be covered by the interview. The guide contains both open and closed questions. Questions in the interview guide are advantageous because: they are flexible, in-depth information is gathered, using the open and closed ended approach the researcher gets a complete and detailed understanding of the issue under research.

3.7.1.3 Focus Group Discussions

A focus group is usually composed of 6-12 homogeneous members of the target population. Focus group discussions can produce a lot of information quickly and are good for identifying and exploring beliefs, ideas or opinions. In this study, focus group discussion assisted the researcher in obtaining detailed information on the contribution of rural electrification project on small scale business ventures undertaken by women.

3.7.2 Secondary Data Sources

A detailed literature review related to the topic of study was conducted to get an in-depth of the study problem and to help shed light on it. Secondary sources of data include publications, Government publications, research institutions, internet publications, newspapers and journals.

3.8 Data Analysis Techniques

Mugenda and Mugenda, (2003) observed that data analysis is the process of bringing order, structure and meaning to the mass of information collected. Both qualitative and quantitative methods of data analysis were used. In analyzing quantitative data, before processing the responses, the completed questionnaires were edited for completeness and consistency. Data was then coded to enable responses to be grouped into various categories. Quantitative data was analyzed by descriptive analysis techniques. The descriptive statistical tool used was SPSS. Findings were presented using frequency tables, percentage tables, means and other central tendencies. Tables were used to summarize responses for further analysis and facilitate comparison.

Qualitative data analysis sought to make general statements on how categories or themes of data were related and their meaning. Qualitative data was transcribed, organized into various emerging themes according to the objectives of the study and reported in a narrative way.

3.9 Ethical Issues

Despite the high knowledge gained through research, knowledge cannot be pursued at the expense of human dignity (Osoo and Onen, 2009). Throughout this study ethical issues were upheld to ensure that dignity of participants was maintained. Mugenda & Mugenda (2008) , suggested that protecting the rights and welfare of participants should be the major ethical obligation of all parties involved in the study. To maintain confidentiality, respondents were advised not to insert their names on the data collection tools. Before collecting data, the researcher explained to the respondents the purpose of the study and assured them of utmost confidentiality on the information they gave. Participation in the study was voluntary and before undertaking the research, a permit and research authorization letter was obtained from the National Council of science and technology.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents findings of the study which have been discussed under thematic sub sections in line with the study objectives. The thematic areas include: Questionnaire return rate; Demographic characteristics of respondents', Small scale business ventures undertaken by women in Thurdibuoro Location, contribution of rural electrification project to women business initiation and status in Thurdibuoro Location, socio-economic factors influencing women access to rural electrification in Thurdibuoro Location and finally, effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location.

4.2 Questionnaire Return Rate

The study targeted 390 respondents; only 378 respondents were able to respond to the instruments giving a response rate of 96.92%. The study managed to get this response rate due to proper organization of the field work and the efficiency of the field assistants after conducting a successful pilot survey. The high questionnaire return rate could also be attributed to respondents' cooperation, adequate time allowed for the completion of questionnaires and the consistent follow–ups made by the researcher and his assistants. This return rate was acceptable because it was above 60% return rate recommended by Amin (2005). According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting, while a response rate of 60% is good and that of 70% and above is very good. The response rate of 96.92% achieved in this study was indeed sufficient for analysis and reporting.

4.3 Demographic Characteristics of Respondents

Respondents in the study were women undertaking small scale business ventures in Thurdibuoro Location, Kisumu county. Demographic information of the respondents was collected in relation to age, marital status, number of children and academic qualification to

enable the researcher demonstrate the diversity of respondents involved in the study. Respondents asked to provide the necessary demographic data of which the results were presented and discussed in the following subsequent sub- themes:

4.3.1 Distribution of Respondents by Age

Researcher asked respondents about their ages because this could help the researcher in determining their business experience, commitment to business and their levels of responsibilities with regard to undertaking small scale business ventures. It was also important to understand women small scale business ventures group dynamics and establish the relationship between age and entrepreneurship. The age of the respondents could also influence risk taking on initiation of new business ideas. In view of this, respondents were asked to state their ages.

Out of 378 respondents who participated in the study, 4.8% fell within the age bracket of 10-20 years, 19.0% of the respondents fell within the age category of 21-30 years, majority 61.90% of the respondents fell within the age bracket of 31-40 years where as 14.3% of the respondents fell within the age category of 41-50 years. Based on findings of this study, majority (61.9%) of the women undertaking small scale business ventures fell within the age category of 31-40 years (Table 4.1).

Table 4.1: Distribution of Respondents by Age

Age	Frequency	Percentage
10-20	18	4.8
21-30	72	19.0
31-40	234	61.9
41-50	54	14.3
Total	**378**	**100.0**

Source: Field Data, 2013

This active generation 31- 40 years are likely to have savings and other asset base which they could use to venture into business more readily than younger and older generations and given that most were married and had children who depended on them economically.

4.3.2 Distribution of Respondents by Marital Status

It was necessary to determine the marital status of women and relate it to the ease of initiation of small scale business undertakings. Marital status is a significant determinant since it influences family size, household expenditure patterns and amount of family investment. For this reason, respondents were asked to state their marital status.

Out of 378 respondents who participated in the study, 19.0% of the respondents were single, majority of respondents' representing 61.9% were married while 9.5% of the respondents were both married and divorced. Findings of the study revealed that majority of women respondents (61.9%) who participated in the study were married (Table 4.2).

Table 4.2: Distribution of Respondents by Marital Status

Marital Status	Frequency	Percentage
Single	72	19.0
Married	234	61.9
Divorced	36	9.5
Separated	36	9.5
Total	**378**	**100.0**

Source: Field Data, 2013

This highest frequency of married women in small scale could be attributed to the fact that married women received moral and financial support from their husbands and likely to have dependants to provide for therefore engage in business ventures.

4.3.3 Distribution of Respondents by Number of Children

In order for the researcher to gauge the level of responsibility of women respondents, the researcher felt that it was necessary to establish the number of children women respondents had since child rearing implied added responsibility, commitment and financial obligation. In lieu of this, a question was posted in the questionnaire which required respondents to state the number of children they had.

Out of 378 respondents who participated in the study, 14.3% of the respondents had no children. Majority of respondents 66.7% had 1-2 children while 19.0% had 3-4 children (Table 4.3).

Table 4.3: Distribution of Respondents by Number of Children

Number of Children	Frequency	Percentage
None	54	14.3
1-2	252	66.7
3-4	72	19.0
Total	**378**	**100.0**

Source: Field Data, 2013

As reflected in Table 4.3, majority of respondents 66.7% had 1-2 children; an indication which implied that majority of women respondents had embraced the modern concept of family planning. Crusaders of family planning posit that, the smaller the number of children the less the strain on the side of parents and the more the input on children in terms of provision of life necessities. The few women respondents 19.0% who had 3-4 children could have anchored on the belief that children are gifts from God and a source of security in old age.

4.3.4 Distribution of Respondents by Education Level

The study sought to establish the educational level of respondents who participated in the study. This was considered important as it could reveal information on the role of education in facilitating the participation of women on small scale business ventures. Respondents were asked to state their highest education level.

Out of 378 respondents who participated in the study, 9.0% had not acquired formal education. 30.7% of the respondents had certificate academic qualification, 41.5% had diploma academic qualification, and 14.3% had degree academic qualification while few respondents and 4.5% had masters academic qualification (Table 4.4).

Table 4.4: Distribution of Respondents by Education Level

Education Levels	Frequency	Percentage
None	34	9.0
Certificate	116	30.7
Diploma	157	41.5
Degree	54	14.5
Masters	17	4.5
Total	**378**	**100.0**

Source: Field Data, 2013

Based on findings of the study, majority of women respondents 60.5% who participated in the study had diploma, degree and masters academic qualifications. This is a positive gesture since entrepreneurship, just like any other profession, requires some level of literacy skills. The high literacy levels among business women in the study as evidenced above is because most professionals like teachers who reside and work in Thurdibuoro Location are engaging in small scale business ventures. This concurs with Wit and Wilden (1989) which assert that women with high educational level are more likely to engage in small scale business ventures. Also women with more experience, higher level of education, more knowledge of

the market and business practice are more likely to be able to identify opportunities for starting new business ventures.

4.4 Rural Electrification Project and Small Scale Business Ventures

This section sought to identify small scale business ventures undertaken by women in Thurdibuoro location under the following sub-themes; type of business venture, business ownership and capital.

4.4.1 Type of Small Scale Business Venture

In order for the researcher to establish the diversity of businesses that were initiated in Thurdibuoro Location by women small scale business entrepreneurs since the inception of Rural Eletrification Project, it was prudent for the researcher to enquire from respondents the types of business ventures they had initiated courtesy of the arrival of Rural Electrification Project. As a result of this noble course, women respondents were asked to identify the types of business ventures they undertook.

Several small scale business ventures came up as a result of initiation of Rural Electrification Project in rural areas as envisaged in Thurdibuoro Location. The most dominant small scale businesses that were initiated in Thurdibuoro Location as a result of incoming of electricity include; salons, shop keeping, barber shops, selling second hand clothes, tailoring, chicken keeping, grain milling, M-pesa operators, selling vegetables, stationery, super market, table banking and taxi (Table 4.5).

Table 4.5: **Type of Small Scale Business Ventures**

Type of Small Scale Business Ventures	Frequency	Percentage
Salons	54	14.3
Barber shops	18	4.8
Chicken Keeping	36	9.5
Grain Milling	18	4.8
M-pesa Operation	18	4.8
Selling Second Hand Clothes	18	4.8
Selling Vegetables	36	9.5
Shop Keeping	18	4.8
Stationery	54	14.3
Supermarket	18	4.8
Table Banking	18	4.8
Tailoring	18	4.8
Pharmacies	36	9.5
Taxi	18	4.8
Total	**378**	**100.0**

Source: Field Data, 2013

Based on the findings, majority of women entrepreneurs took advantage of the opportunity of availability of electricity and ventured on businesses which relied on electricity for their operations. For this reason, it can be argued positively that initiation of electricity in rural areas empowered the rural populace, more so, women who are the majority. This observation concurs with Meisen & Akin, (2008) studies which shows that there is a high correlation between the level of electricity consumption and human development index. Given the critical role of access to electricity in meeting the MDGs and ensuring the development of rural areas, many developing countries strive to provide electricity to their populace.

4.4.2 Business Ownership

The researcher was interested in examining whether the businesses run by women in Thurdibuoro Location were owned by women who ran them or they were employed to run the businesses on behalf of the original owners. This information could help the researcher establish whether respondents took advantage of Rural Electrification Project and initiated small scale business ventures as a means of livelihood. For this reason, respondents were asked to specify whether they own the business they ran or they were employees.

Out of 378 respondents who participated in the study, majority of women respondents 90.5% acknowledged that they took advantage of the availability of electricity and started their own business ventures. However, 9.5% women respondents who also participated in small scale business ventures opined that they were employed by the owners of the ventures (Table 4.6).

Table 4.6: Business Ownership

Business Ownership	Frequency	Percentage
Yes	342	90.5
No	36	9.5
Total	**378**	**100.0**

Source: Field Data, 2013

The biggest percentage of women respondents who acknowledged that they initiated their own business authoritatively confirmed that Rural Electrification Project was used as a conduit in facilitating small scale business ventures undertaken by women, sentiments echoed by Cabraal *et al.*, (2005) who asserted that access to electricity has a significant impact in rural development particularly when used efficiently and on income-generating activities.

4.4.2.1 Nature of Business ownership

In order to have an in-depth understanding of business ownership, the researcher went ahead and looked at the nature of business ownership. Respondents were asked to identify the nature of ownership of their business.

As reflected in the study, 38.1% of small scale business ventures were single business owned, 33.3% of the small scale business ventures were family business owned, 28.6% of the small scale business ventures were co-operate owned. Findings of the study indicate 38.1% of the respondents initiated their own small scale business ventures courtesy of the availability of Rural Electrification Project (Table 4.7).

Table 4.7: Nature of Business Ownership

Nature of Business Ownership	Frequency	Percentage
Single	144	38.1
Family	126	33.3
Cooperate	108	28.6
Total	**378**	**100.0**

Source: Field Data, 2013

This is a positive gesture as it insinuates that most women respondents took advantage of the presence of electricity and initiated small scale businesses that utilize electricity in their operations. This confirms the commitment of Kenya governments at the different tiers have tried to provide electricity using rural electrification programmes which involves extending the existing distribution lines to rural communities. Such programmes have huge potential benefits because the availability of electricity and other basic amenities can increase the productivity and profitability of existing small scale business ventures in the rural areas, and also reduce the barrier to the creation of new small scale business ventures which consume electricity in their operations e.g. grain milling, tailoring shops, shop keeping, hair salons etc

Kooijman-van Dijk & Clancy (2010), which in-turn may increase the available disposable income that may be used to improve the living standard of people.

The researcher cross-tabulated the range of capital required to start a business venture and nature of business ownership in order to further confirm the linkage between the two variables.

Within a capital range of Kshs 1001- Kshs 10000, the most dominant nature of business ownership was single business. This confirms the fact that single business ownership was the most popular form of business ownership among women respondents (Table 4.8.).

Table 4.8: Cross-Tabulation of Nature of Business Ownership and Range of Capital required to start a Small Scale Business Venture

		Range of capital required to start a small scale business venture					
		Ksh 1001-5000	5001-10000	10001-15000	Above 15000	NA	**Total**
Nature of ownership of the business venture	Single	36	18	0	18	72	**144**
	Family	0	36	0	36	54	**126**
	Cooperate	18	0	36	0	54	**108**
Total		**54**	**54**	**36**	**54**	**180**	**378**

Source: Field Data, 2013

As depicted in Table 4.8, the main reason for the popularity of single business ownership among women respondents was because such businesses required slightly lower capital base to initiate- between Kshs 1001-10000 as compared to family and cooperate business ownership which require a capital range of Kshs 10001- 15000+. This concurs with Cater, (2006) there is unequivocal evidence that women businesses in UK start with lower levels of capitalization, lower ratio of debt finance and are much less likely to use private equity or venture capital.

4.4.3 Range of Capital Required to Start a Small Scale Business Venture

The researcher looked at the range of capital required to start a small scale business venture in order to establish the financial flexibility within which women respondents could start their businesses. For this reason, respondents were asked to state the range of capital they required to start their small scale business ventures.

Out of 378 respondents who participated in the study, 14.3% started their businesses with a capital base within the range of Kshs 1001-5000 and Kshs 5001-10000. 9.5% started their businesses with a capital base of Kshs 10001-15000 while 14.3% started their businesses with a capital base within the range of Kshs 15000 and above (Table 4.9).

4.9: Range of Capital required to Start a Small Scale Business Venture

Range of Capital for Business Start-ups	Frequency	Percentage
Ksh 1001-5000	54	14.3
5001-10000	54	14.3
10001-15000	36	9.5
Above 15000	54	14.3
Don't Know	180	47.6
Total	**378**	**100.0**

Source: Field Data, 2013

It is clear that majority of the women respondents 28.6% started their businesses with a capital base ranging between Ksh1001-10000. Just as the name suggests, small scale business ventures require slightly lower venture capital, an aspect that explains why such businesses could readily be started. This concurs with Cater, (2006) who observed that there is unequivocal evidence that women businesses in UK start with lower levels of capitalization, lower ratio of debt finance and are much less likely to use private equity or venture

capital.47.6% did not have an idea of their capital base, which is a clear indication of lack of proper financial record keeping.

The researcher cross-tabulated the range of capital required to start a business venture and business ownership in order to further confirm the connectivity between the two variables 23.8% of women respondents who owned their own businesses started their business with a capital base within the range of Ksh1001-10000 (Table 4.10).

Table 4.10: Cross-Tabulation of Range of Capital required to start a Small Scale Business Venture and Own Business

		Range of capital required to start a small scale business venture					
		Kshs 1001-5000	5001-10000	10001-15000	Above 15000	NA	**Total**
Own the business	Yes	54	36	18	54	180	**342**
	No	0	18	18	0	0	**36**
Total		**54**	**54**	**36**	**54**	**180**	**378**

Source: Field Data, 2013

This confirms the fact that majority of small scale business ventures within Thurdibuoro Location were personal business ventures owned by the initiators. Many of these SMEs are women owned or operated. Self-employment and women entrepreneurship have been growing in less developed economies, as means for women to survive themselves and often times to help support their family. Hence it can be seen that women entrepreneurship is a growing phenomenon and has had a significant economic impact in all economies (Kibas, 1999).

This can be attributed to the fact that small scale business venture require light capital investment which individual women entrepreneurs can easily raise.

4.5 Rural Electrification Project and Women Business Initiation and Status

The second objective of the study was to examine the contribution of Rural Electrification Project to women business initiation and status. This was necessary in order to appreciate the contribution of Rural Electrification Project to small scale business ventures undertaken by women in Thurdibuoro Location. This theme has been discussed under various sub- themes including; women business investment, women business initiation, women response to REP.

4.5.1 Women Business Investment

The researcher was interested in establishing whether women were engaged in income generating activities (business investment) and the number of business investment (income generating activities) they were engaged in since the introduction of Rural Electrification Project. Majority of women who were engaged in income generating activities were mostly engaged in either one IGA at 35.2% or two at 29.4% (Table 4.11).

Table 4.11: Cross-Tabulation of Currently engaged in IGA and the Number of IGAS currently engaged in

		Number of IGAS currently engaged in						
		One	Two	Three	Four	Five	NA	Total
Currently engaged in IGA	Yes	**108**	**90**	**36**	**18**	**54**	**0**	**306**
	No	**0**	**0**	**0**	**0**	**0**	**72**	**72**
Total		**108**	**90**	**36**	**18**	**54**	**72**	**378**

Source: Field Data, 2013

The highest number of women currently engaged either one or two income generating activities qualifies the fact that majority of small scale business ventures undertaken by women were single business owned. This observation concurs with empirical studies conducted by Kooijman-van Dijk& Clancy, (2010) on small scale business ventures which consume electricity in their operations.

4.5.1.1 Type and Number of Income Generating Activities Women were engaged in

The researcher was interested in establishing the type and number of income generating activities women carried out in Thurdibuoro Location in order to examine the contribution of Rural Electrification Project to women business status. To do this, women entrepreneurs were asked to identify the type and number of business ventures they were engaged in.
Majority of women who were engaged in one IGA was at 25% and at 33.3% in two income generating activities were mostly shop keepers (Table 4.12).

Table 4.12: Cross Tabulation of Type and Number of Income Generating Activities Women were engaged in

		Number of IGAS currently engaged in						
		One	Two	Three	Four	Five	NA	Total
Type of IGAS engaged in	Shop keeping	54	72	36	0	54	0	**216**
	Grain Milling	18	18	0	0	0	0	**36**
	Tailoring	18	0	0	0	0	0	**18**
	Hair salons	18	0	0	18	0	0	**36**
	NA	0	0	0	0	0	72	**72**
Total		**108**	**90**	**36**	**18**	**54**	**72**	**378**

Source: Field Data, 2013

Findings of this study reveal that the most dominant business in Thurdibuoro Location was shop keeping and most of them were single business owned by women.

4.5.2 Women Business Initiation

The researcher looked at the number of businesses initiated by women since the introduction of rural electrification project in order to gauge the extent to which the emergence of rural electrification had influenced the livelihood of women entrepreneurs. For this reason, women respondents were asked to identify the number of businesses they had initiated since the introduction of rural electrification project.

Out of 378 respondents who participated in the study, 14.3% had not initiated any business venture, after the initiation of rural electricity while 42.9% had both initiated 1-2 as well as 3-4 business ventures after the initiation of electricity. Findings of this study indicate that a whooping majority of women respondents 85.8% started their business ventures after electricity was availed in Thurdibuoro Location (Table 4.13).

Table 4.13: Number of Business Ventures Initiated since the Introduction of Rural Electrification Project

Number initiated since Introduction of REP	Frequency	Percentage
None	54	14.3
1-2	162	42.9
3-4	162	42.9
Total	**378**	**100.0**

Source: Field Data, 2013

This entrepreneurial spirit by women in Thurdibuoro Location is a positive gesture because the small scale business ventures initiated may increase their available disposable income thereby adding impetus to their living standard. This is in line with findings of a study conducted by Barkat (2004) while analyzing data on the broad impact of national rural electrification programme which revealed that more than 40% of all households with electricity reported that electric power in their household had somehow influenced an increase in their income.

4.5.3 Women Response to Rural Electrification Project

Response of women towards rural electrification project was examined in order to establish the reaction of women towards the initiation of small scale business ventures in rural areas as result of availability of electricity in rural areas. In order to achieve this, the researcher sought to solicit information from women respondents on how they embraced the introduction of rural electrification project since its inception.

Out of 378 respondents who participated in the study, majority of the respondents 57.1% responded positively towards the emergence of rural electrification project by appreciating the cornerstone role played by electricity in empowering women to initiate and sustain small scale business ventures consuming electricity in their operations. 14.3% of the respondents reacted negatively towards the emergence of rural electrification project. 28.6% of the respondents displayed mixed reaction i.e neither reacted negatively nor responded positively (Table 4.14).

Table 4.14: Women Response to Rural Electrification Project

Response to REP	Frequency	Percentage
Positively	216	57.1
Negatively	54	14.3
Mixed reaction	108	28.6
Total	**378**	**100.0**

Source: Field Data, 2013

Based on findings of this study, majority of respondents 57.1% responded positively towards the emergence of rural electrification project. This implied that majority of women respondents viewed the emergence of electricity as an eye opener to the rural populace by granting them an opportunity of venturing into business. In this case, the rural populace viewed electricity as their saviour towards financial independence. Sentiments which are shared by Barnes, (1988) who summarized in his classic study 'Electric Power for Rural Growth' that "rural electrification does have a significant impact on rural industry and commerce".

4.6 Rural Electrification Project and Socio-economic factors

The third objective of the study was to establish socio-economic factors influencing women access to rural electrification in Thurdibuoro Location. The researcher felt that it was necessary to ascertain whether the emergence of rural electrification project had influenced the socio and economic conditions of respondents. In order to achieve this, the researcher looked at different aspects of socio-economic indicators. These include; health, education and income.

4.6.1 Rural Electrification and Education

The study sought to establish the contribution of rural electrification project in educational development in Thurdibuoro Location. This was considered important as it could reveal information on the role of electricity in propagating education. In view of this, respondents were asked to justify whether presence of electricity in schools has improved the quality of service provision by use of computers and online services.

Out of 378 respondents who participated in the study, 52.4% strongly agreed that presence of electricity in schools had improved the quality of service provision for example use of computers and online services. 28.6% agreed that presence of electricity in schools had improved the quality of service provision by use of computers and on line services. 14.3% were neutral whereas 4.8% disagreed that presence of electricity in schools had improved the quality of service provision by use of computers and online services (Table 4.15).

Table 4.15: Rural Electrification and Education

	Frequency	Percentage
Strongly agree	198	52.4
Agree	108	28.6
Neutral	54	14.3
Disagree	18	4.8
Total	**378**	**100.0**

Source: Field Data, 2013

Based on findings of the study, majority of the respondents 81.0% agreed that presence of electricity in schools had improved the quality of service provision by use of computers and online services. The (UN, 2002) echoed this fundamental role played by electricity in propagating educational services by asserting that, to achieve universal primary education, electricity is needed for good lighting for reading in homes, to power some teaching aids and to facilitate computers and on line services in schools.

4.6.2 Rural Electrification and Health

In order for the researcher to appreciate the contribution of rural electrification project in promoting health, the researcher enquired from respondents whether the emergence of electricity in rural areas and its subsequent installation in both public and private hospitals had improved health services provision.

Out of 378 respondents who participated in the study, majority of respondents 52.4% acknowledged the fact that the emergence of electricity in rural areas and its subsequent installation in both public and private hospitals had improved health services provision while 47.6% held a contrary observation (Table 4.16).

Table 4.16: Rural Electrification and Health

Response to REP on Health	Frequency	Percentage
Yes	198	52.4
No	180	47.6
Total	**378**	**100.0**

Source Field Data, 2013

Findings of the study revealed that majority of respondents 52.4% appreciated the pivotal role played by electricity in facilitating the provision of health services in hospitals. An observation that is closely linked to (UN, 2002) report which summarized that, to reduce child mortality and improve maternal health, electricity is needed in health facilities to power refrigerators for preserving drugs and vaccines.

4.6.3 Rural Electrification and Income

The study explored the contribution of rural electrification project on small scale business ventures undertaken by women in order to ascertain whether electricity had facilitated the enhancement of women economic empowerment. To do this, the researcher enquired from respondents the impact of rural electrification project on the volume of sales from the business venture.

Out of 378 respondents who participated in the study, 9.5% of respondents said that availability of electricity in their business ventures had neither reduced nor impacted on the volume of their sales, majority of respondents 81.0% appreciated that availability of electricity in their business ventures had increased the volume of their sales, an aspect which confirms that rural electrification project had positively impacted on the lives of women respondents by improving on their financial viability (Table 4.17).

Table 4.17: Rural Electrification and Income

	Frequency	Percentage
Reduced	36	9.5
Not impacted	36	9.5
Increased	306	81.0
Total	**378**	**100.0**

Source: Field Data, 2013

This observation is echoed by Meisen & Akin, (2008) studies which summarized that there is a high correlation between the level of electricity consumption and human development index. This is because the availability of electricity and other basic amenities can increase the productivity and profitability of existing small scale business ventures in the rural areas, and also reduce the barrier to the creation of new small scale business ventures which consume electricity in their operations. Nichter & Goldmark, (2009) concurs with the study that electricity increases productivity which in-turn may increase the available disposable income that may be used to improve the standard of living of beneficiaries.

4.7 Rural Electrification Project and Business Hours and Efficiency

The researcher felt there is need to examining the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location in order to ascertain whether electricity had influenced business hours and efficiency of women undertakings under the following sub-themes; initiation of small scale business ventures, women empowerment and asset accumulation.

4.7.1 Rural Electrification and Initiation of Small Scale Business Ventures

Presence of rural electrification may have spill over benefits such as extension of business hours, enhanced security at night etc. This may in turn attract more small scale business ventures. In order for the researcher to ascertain these anticipated benefits, opinion of respondents was sought regarding to mushrooming of small scale business ventures by

enquiring from them whether introduction of rural electrification had contributed to the mushrooming of small scale business ventures utilizing electricity in their operations.

Out of 378 respondents who took part in the study, 14.3% disagreed that rural electrification facilitated the mushrooming of small scale business ventures, 9.5% had no comment, 28.6% the agreed where as a whooping majority of the respondents 47.6% of the respondents authoritatively agreed that rural electrification programme indeed facilitated the mushrooming of small scale business ventures (Table 4.18).

Table 4.18: Rural Electrification and Mushrooming of Small Scale Business Ventures

REP and mushrooming business	Frequency	Percentage
Strongly disagree	36	9.5
Disagree	18	4.8
No comment	36	9.5
Agree	108	28.6
Strongly agree	180	47.6
Total	**378**	**100.0**

Source: Field Data, 2013

The fact that majority of respondents 47.6% agreed that introduction of rural electrification had contributed to the mushrooming of small scale business ventures implied that rural electrification had positively impacted on the livelihood of women respondents. Sentiments which are shared by Dube,(2001) as cited in Karekezi & Majoro, (2002) which asserted that security lighting on high-masts poles in poor urban areas of South Africa has resulted in the urban poor setting up small enterprises in the evenings.

Similarly, the Nairobi City Council in Kenya had embarked on a program to repair and install streetlights along the inner roads, walkways and slums with a view to relocating hawking businesses from the congested central business district into the outer parts of the city. Installation of streetlights has increased visibility, attracted more customers, improved

security and extended the hours of operating businesses into the night, thus improving sales and profitability (Kirubi, personal observation, July 2005; *Daily Nation,* 12/16/2005).

4.7.2 Rural Electrification and Women Empowerment

The researcher was interested in ascertaining whether rural electrification project had facilitated the economic empowerment of women in Thurdibuoro Location. This was necessary because it could be used as an indicator towards measuring the contribution of electricity on the livelihood of women respondents. In view of this, opinion of respondents was sought regarding to whether rural electrification had been used as a conduit towards women business undertakings.

Out of 378 respondents who participated in the study, 76.2% agreed that rural electrification propagated the economic empowerment of women entrepreneurs. However, 23.8% were neutral and did not commit whether they agreed or disagreed that rural electrification enhanced women economic empowerment through facilitating women entrepreneurial activities (Table 4.19).

Table 4.19: Rural Electrification and Women Empowerment

REP and women Empowerment	Frequency	Percentage
Strongly agree	144	38.1
Agree	144	38.1
Neutral	90	23.8
Total	**378**	**100.0**

Source: Field Data, 2013

Findings of the study clearly indicated that 76.2% of respondents authoritatively agreed that rural electrification enhanced their economic empowerment through facilitating their participation in entrepreneurial activities. This facilitation was through extension of business hours i.e either very early in the morning or very late at night, creating conducive business environment by enhancing security etc. This finding concurs with Barkat *et al.,* (2002) studies which revealed that an extended time between sunset and sleep of up to one hour for members of electrified households in Bangladesh assisted entrepreneurial members in extending business hours.

4.7.3 Rural Electrification and Asset Accumulation

The researcher felt that it was prudent to examine the assets women respondents had accumulated by participating in entrepreneurial activities courtesy of rural electrification. With proper knowledge of assets accumulated (investments) by women who are engaged in small scale business ventures places the researcher at a vantage position of gauging the contribution of rural electrification towards asset accumulation. In view of this, the researcher sought the opinion of respondents regarding the influence of rural electrification on asset accumulation by women entrepreneurs.

Out of 378 respondents who participated in the study, 38.1% strongly agreed that rural electrification had increased their level of asset accumulation (investment) through participation in entrepreneurial activities, 52.3% agreed that their participation in small scale business ventures enabled them to increase their asset base. 4.8% were non-committal (had no comments), in the same vein, 4.8% strongly disagreed that women who were engaged in small scale business ventures increased their asset base (investment) courtesy of electricity (Table 4.20).

Table 4.20: Rural Electrification and Asset Accumulation

REP and Asset Accumulation	Frequency	Percentage
Strongly agree	144	38.1
Agree	198	52.3
No comment	18	4.8
Strongly disagree	18	4.8
Total	**378**	**100.0**

Source: Field Data, 2013

Findings of the study revealed that majority of women respondents 90.4% agreed that women who were engaged in small scale business ventures utilizing electricity in their operations increased their asset base.

4.7.4 Rural Electrification and Business Hours

The researcher was interested in ascertaining whether rural electrification project had facilitated the extension of business hours by women in Thurdibuoro Location. This was necessary because it could be used as an indicator towards measuring the contribution of electricity on the increase in income and improvement of sales hence an improvement in livelihood of women respondents. In view of this, opinion of respondents was sought regarding to whether rural electrification had been used as a conduit towards women business undertakings by increase of business hours.

Out of 378 respondents who participated in the study, majority of respondents 78.8% acknowledged the fact that the emergence of electricity in rural areas had increased their business hours while 21.1% held a contrary observation (Table 4.21).

Table 4.21: Rural Electrification and Business Hours

Response to REP on Business Hours	Frequency	Percentage
Yes	298	78.8
No	80	21.1
Total	**378**	**100.0**

Source: Field Data, 2013

Findings of the study revealed that majority of women respondents 78.8% agreed that rural electrification has increased the contact hours with their clients hence improving their productivity, sales, and income and improving their livelihood. This study concurs with Dube, (2001) as cited in Karekezi & Majoro, (2002) suggested that the security lighting on high-masts poles in poor urban areas of South Africa had resulted in the urban poor setting up small enterprises in the evenings. Similarly, the Nairobi City Council in Kenya had embarked on a program to repair and install streetlights along the inner roads, walkways and slums with a view to relocating hawking businesses from the congested central business district into the outer parts of the city. Installation of streetlights has increased visibility, attracted more customers, improved security and extended the hours of operating businesses into the night, thus improving sales and profitability (Kirubi, personal observation, July 2005; *Daily Nation,* 12/16/2005).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains summary of findings, conclusion, recommendations, contributions to the body of knowledge and suggestions for further research.

5.2 Summary of Findings

The study sought to establish the contribution of rural electrification project on small scale business ventures undertaken by women in Thurdibuoro Location. Findings of the study revealed that majority of women 61.9% undertaking small scale business ventures fell within the age category of 31-40 years. On marital status, findings of the study revealed that majority of women respondents 61.9% who participated in the study were married. Looking at number of children, majority of respondents 66.7% had 1-2 children, an indication that majority of women respondents had embraced the modern concept of family planning. The few women respondents 19.0% who had 3-4 children still held the old belief that children are gifts from God and a source of security in old age. On academic qualification, majority of women respondents 60.5% who participated in the study had Diploma, Degree and Masters academic qualifications because most were professional women.

The first objective of the study identified small scale business ventures undertaken by women in Thurdibuoro Location. Findings of the study revealed that, the most dominant small scale businesses that were initiated in Thurdibuoro Location as a result of incoming of electricity include; salon and shop keeping 14.3%, followed by barber, selling second hand clothes and tailoring 9.5% and finally, chicken keeping, grain milling, M-pesa operators, selling vegetables, stationery, super market, table banking and taxi 4.8%. On business ownership, a whooping majority of women respondents 90.5% acknowledged that they took advantage of the availability of electricity and started their own business ventures. While examining the range of capital required to venture into business, majority of the women respondents 28.6% started their businesses with a capital base ranging between Ksh1001-10000.

The second objective of the study sought to examine the contribution of rural electrification project to women business initiation and status in Thurdibuoro Location. Findings of the study revealed that majority of women who were engaged in income generating activities were mostly engaged in either one or two income generating activities at 35.2% and 29.4% respectively. On business initiation, findings of the study indicate that a whooping majority of women respondents 85.8% had taken advantage of the availability of rural electrification project and initiated small scale business ventures dealing with electricity in their operations. Looking at women response to rural electrification project, majority of respondents 57.10% responded positively towards the emergence of rural electrification project by appreciating the cornerstone role played by electricity in empowering women to initiate and sustain small scale business ventures consuming electricity in their operations.

The third objective of the study looked at socio-economic factors influencing women access to rural electrification in Thurdibuoro Location. On influence of rural electrification in schools, majority of the respondents 81.0% agreed that presence of electricity in schools had improved the quality of service provision by use of computers and online services. On rural electrification and health, findings of the study revealed that majority of respondents 52.4% appreciated the pivotal role played by electricity in facilitating the provision of health services in hospitals. While examining the influence of rural electrification on income, majority of respondents acknowledged the fact that availability of electricity in their business ventures had increased the volume of their sales, an aspect which confirms that rural electrification project had positively impacted on the lives of women respondents by improving on their financial viability.

The fourth objective of the study examined the effect of rural electrification project on business hours and efficiency of small scale business ventures undertaken by women in Thurdibuoro Location. Findings from the study revealed that 78.8% of the respondents increased their business hours hence increase in sales and income.47.6% agreed that introduction of rural electrification had contributed to the mushrooming of small scale business ventures implied that rural electrification had positively impacted on the livelihood of women respondents. On rural electrification and women empowerment, findings of the

study clearly indicated that 76.2% of respondents authoritatively agreed that rural electrification enhanced their economic empowerment through facilitating their participation in entrepreneurial activities. Finally, looking at rural electrification and asset accumulation, results obtained from the study revealed that majority of women respondents 90.4% agreed that women who were engaged in small scale business ventures utilizing electricity in their operations increased their asset base.

5.3 Conclusion

The main purpose of the study was to establish the contribution of rural electrification project on small scale business ventures undertaken by women in Thurdibuoro Location. In terms of the stated research objectives, the following findings emerged from the study:

Findings of the study revealed that the most dominant small scale businesses that were initiated in Thurdibuoro Location as a result of incoming of electricity include; saloon and shop keeping, followed by barber, selling second hand clothes and tailoring and finally, chicken keeping, grain milling, M-pesa operators, selling vegetables, stationery, super market, table banking and taxi. Majority of women entrepreneurs seized the opportunity of availability of electricity and ventured on businesses which relied on electricity for their operations. Looking at nature of business ownership, the study revealed that majority of respondents initiated their own small scale business ventures courtesy of the availability of Rural Electrification Project.

On business engagement and income generating activities, majority of women who were shop keepers were engaged in one and two income generating activities. While studying women business initiation, findings indicate that a whooping majority of women respondents had taken advantage of the availability of rural electrification project and initiated small scale business ventures dealing with electricity in their operations. Finally, on women response towards rural electrification project, majority of respondents responded positively towards the emergence of rural electrification project.

On rural electrification project and education, majority of respondents agreed that presence of electricity in schools had improved the quality of service provision by powering some

teaching aids and facilitating the use of computers and online services. Looking at rural electrification project and health, the study established that majority of respondents appreciated the pivotal role played by electricity in facilitating the provision of health services in hospitals. While examining the contribution of rural electrification project on income of small scale business ventures undertaken by women, the study revealed that majority of respondents acknowledged the fact that availability of electricity in their business ventures had increased the volume of their sales, an aspect which confirms that rural electrification project had positively impacted on the lives of women respondents by improving on their financial viability.

Findings of the study indicated that majority of respondents acknowledged that introduction of rural electrification had contributed to the coming up of small scale business ventures. On influence of rural electrification on women empowerment, findings of the study clearly indicated that respondents authoritatively agreed that rural electrification enhanced their economic empowerment through facilitating their participation in entrepreneurial activities. Finally, looking at rural electrification and asset accumulation, findings of the study revealed that majority of women respondents agreed that women who were engaged in small scale business ventures utilizing electricity in their operations increased their asset base.

5.4 Recommendations

Based on the study findings, the following recommendations were made:

1. Rural electrification project should be extended to cover each and every part of remote rural areas in order to maximize its benefits of promoting the initiation of small scale business.
2. Provision of rural electrification should be domesticated to authenticate its reliability and affordability so as to continue tapping its fundamental role of supporting the initiation of small scale business ventures
3. All rural schools, rural health institutions and rural market centres should be electrified in order to boost and enhance their capacity in service provision.

4. Rural electrification project should be intensified through extension of business hours in order to facilitate the widening of business opportunities and market choices for entrepreneurs with a view of transforming rural areas into 24-hours market economy.

5.5 Areas for Further Research

This study did not explore certain areas that were equally important. Such areas were left out because the scope of this study warranted. In view of this, the study suggests the following areas for further research:

a) Challenges facing women undertaking small scale business ventures in Thurdibuoro Location, Kisumu county.
b) Role of rural electrification project in propagating the Kenyan dream of a 24-hours market economy.
c) A replication of the same study in a different locality in order to validate the findings of the study.

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