IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 19, Issue 12. Ver. V (December. 2017), PP 46-49
www.iosrjournals.org

Influence of Social Economic Factors on Successful Electricity Installation by Kenya Power and Lighting Company (KPLC) in Central Rift Region

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Abstract: *The availability of electricity is a key pillar of the economic development and achievement of Kenya's vision 2030 development milestone. However, despite the efforts made by the government to increase electricity installation across the country, connectivity remains relatively low. Some of the efforts undertaken to increase electricity installation include Umeme Pamoja, Stima Loan, and rural electrification programmes amongst others. This study objective of the study is to examine the effects of social economic factors on successful electricity installation projects by KPLC in Central Rift Region. The study was guided by a descriptive research design and structured questionnaires were used for data collection. The sample size used for the study was 100 respondents consisting of the KPLC electricity installation customers and staff. The SPSS version 21 was used for the data analysis. From the findings, it was clear that the relationship between social economic factors and electricity installation is statistically significant (r =- 0.217; p <0.05). The null hypothesis that socio economic factors have a significant influence on successful electricity installation projects by KPLC in Central Rift Region was thus rejected. The study concludes that there is need for more emphasis from the KPLC on the social economic factors that lead to electricity installation. Security concerns contribute towards the decision by most customers to have electricity installation than other social economic factors. KPLC should find more ways to make electricity connection easier, affordable and faster in order to have successful electricity installations which will increase its customer base and earn it more revenue. This will also enable the company to meet the demand of growing populations across the country and assist their customers in dealing with security issues and in the undertaking of functional duties.*

Keywords: *Project, Social Economic Factors, Electricity Installation*

Date of Submission: 05-11-2017 Date of acceptance: 22-12-2017

I. Introduction

It is estimated that 40% of Kenya's population is urban and nearly half of the entire population will be urban by the year 2020 (Ogutu, 2014)). The country is expected to achieve a gross domestic product (GDP) growth rate of 10% by the year 2030 as well as provide electricity connectivity to 40% of the rural population by 2020 (Oketch, 2013). The contribution of the energy sector to the overall tax revenue is about 20%, equivalent to 4% of GDP (Ngatia, 2013). The country is experiencing major challenges in the energy sector due to the high expectations and demand in the manufacturing, agricultural, tourism, transport and other sectors due to sharp increase in population, rural urban migration and economic growth (Wepukhulu, 2014). Statistics from the Kenya Institute of Public Policy and Analysis (KIPPRA) shows that the electricity demand is projected to grow from 5035Gwh in 2003/04 to 8561 Gwh in 2013/14 (Ngumbau, 2013).

Responding to the limited access to electricity, many governments have adopted the rural electrification programs (Ogutu, 2014). Rural electrification is the process of bringing electrical power to rural and remote areas. Electricity is used, not only for lighting and household purposes but it also allows for mechanization of many farming operations such as threshing, milking and hoisting grain for storage. In areas facing labour shortages, this allows for greater productivity at reduced cost. The Rural Electrification Authority (REA) that is mandated with implementing the rural electrification programme in Kenya came into operation in July 2007 (Ngatia, 2013) This agency was also expected to increase the speed of implementation of several electricity projects had been lined up for implementation throughout the country including the development of a comprehensive rural electrification master plan which provided crucial information for selecting projects for funding at a given time (Omuoso, 2013). The Kenya Power and Lighting Company (KPLC) projected over 150,000 connections annually by the year 2010 (Kutswa, 2011). The high grid expansion costs, high connection costs, upfront investments, low threshold demand and low population densities affected electricity connections (Kitungu, 2014).

The other efforts that KPLC has undertaken in order to increase the electricity installations include the provision of the Stima Loan, Umeme Pamoja initiative, maximization, pre-investment, and slum upgrading (Wambugu, 2010). The KPLC Stima Loan is a facility that has been introduced to enable needy customers' access credit from an internally managed Revolving Fund (RF) for payment of electricity connection. This facility joined the flagship brand, Stima Loan, which was being executed through Equity Bank. The company has benefited positively through creation of a customer base, increase in connectivity and increase in revenue collection. The general public benefited from the Stima Loan and fully supported it as they also found it affordable since the connection cost was low. The process of applying for Stima Loan was also not complicated hence catering for both literate and illiterate customers.

Another initiative promoting electricity access in the rural areas is "Umeme Pamoja", which translates as "Electricity Together". This campaign aims to establish a joint group of households, so as to connect them collectively to the grid, thus saving costs. This scheme is financed by the group settlement electrification schemes created by the Kenya Power. According to Nyakoe (2014), this scheme is aimed at making electricity connection easier, affordable and faster. It is set to enable as many Kenyans as possible get electricity. It involves organizing potential customers in the same neighbourhood to team up and apply jointly so as to reduce individual costs.

The energy sector has been restructured through the sessional paper number of 2004 and the energy act number 12 of 2006 to create diverse institutions with specialized roles. These institutions include the Ministry of Energy (MOE), Energy Regulatory Commission (ERC), Kenya Generating Company (KenGen), Kenyan Power and Lighting Company (KPLC), the Rural Electrification Authority (REA), Kenya Electricity Transmission Company (KETRACO), Geothermal Development Company (GDC) and Independent Power Producers (IPPs) (Mutuku, 2013). Kenya Power owns and operates most of the electricity transmission and distribution system in the country and sells electricity to over 2.6 million customers (Ngumbau, 2013). The Company's key mandate is to plan for sufficient electricity generation and transmission capacity to meet demand; building and maintaining the power distribution and transmission network and retailing of electricity to its customers (Oketch, 2013). The Government has a controlling stake at 50.1% of shareholding with private investors at 49.9% (Nyakoe, 2014). Kenya Power is listed on the Nairobi Securities Exchange. The KPLC is divided into nine regions that is Central Rift, Coast, Mount Kenya, Nairobi North, Nairobi South, Nairobi West, North Eastern, North Rift and West Kenya regions. The central rift region is composed of Naivasha, Nyahururu, Molo, Ravine, Narok, Maralal, and Nakuru sub branches.

II. Literature Review

Empirical Review

According to Oketch (2013), Kenya is among the developing countries ranked as having the lowest connectivity to electricity in the world (less than 20%) which has negatively affected social progress. The social economic factors, physical infrastructure and financing influence the connectivity to the national grid (Nyakoe, 2014). Access to electricity increases available income for households, improves their environment, gives access to new services (particularly audio visual services) and helps create economic activities that use electricity or replace the energies they use such as mills, welding, communication and audiovisual sector. Access to electricity provides better quality lighting, which improves schooling conditions by making it possible to study after 6 pm or early in the morning (Kariuki, 2013).

III. Objective of the Study

To examine the effects of social economic factors on successful electricity installation projects by KPLC in Central Rift Region.

IV. Research Hypothesis

H_0: There is no significant statistical relationship between social economic factors and successful electricity installations by KPLC in Central Rift.

H_A: There is a significant statistical relationship between social economic factors and successful electricity installations by KPLC in Central Rift.

V. Methodology

The study adopted the descriptive research design. The target population of this study was the people that KPLC Central Rift region targeted for connection in the 2014-2015 period. The study utilized a sample size of 100 respondents. Therefore, 100 structured questionnaires were distributed to the respondents and 85 questionnaires were found to be complete, which formed the basis of the data analysis in this study. In this context, the response rate for this study was 85.0% which was deemed sufficient for data analysis. According to

Mugenda (2003), a response rate of above 80% is deemed sufficient for the study and therefore this response rate at 85.0% was considered sufficient for the study.

VI. Findings And Discussions

There were more male (72.1%) than female (27.9%) respondents in the study which was informed by the fact that a majority of the house owners are male. In the context of the house types, 51.2% of the respondents had two bedroomed houses, 36.0% had three bedroomed houses, 10.5% had four bedroomed houses and 2.3% had five bedroomed houses. The type of the houses is significant in helping understand on how different house types perceive electricity installation and there is also variance in the electricity usage.

There are several social economic factors that contribute towards electricity installation including security concerns, entertainment purposes, undertaking of the functional duties, availability of the finances, and utilization of the government scheme to get electricity connection. Different social economic factors were cited as the reasons for electricity installation including security concerns (97.7%), entertainment purposes (87.2%), undertaking of functional duties (72.1%), availability of finances (100%), and neighborhood electricity connection (86.1%). These social economic factors affect due their influence or importance in the homeowners. The security concerns are primary due to the fact that most of the houses are built away from towns or congested areas and there is need for the homeowners to put up security lights. On the other hand, the electricity is important for the entertainment purposes like the ability to watch television and listen to the radio. The availability of the electricity enables the undertaking of the functional duties such as ironing of clothes.

Table 1; Distribution Frequencies on Social Economic Factors

Statement	SA	A	U	D	SD
Security concerns contributed towards the decision to install electricity in my house	54.7%	43.0%	2.3%	0%	0%
I installed electricity in my house for the entertainment purposes such as watching television and listening to radio	44.2%	43.0%	12.8%	0%	0%
I installed electricity in my house to enable me undertake functional duties such as ironing clothes, heating water etc.	37.2%	34.9%	15.1%	12.8%	0%
Finances availability was the major factor affecting my ability to install electricity at my house	65.1%	34.9%	0%	0%	0%
The electricity connection in my neighborhood greatly influenced my electricity installation process	32.6%	53.5%	14.0%	0%	0%
I utilized a government scheme to get connected i.e. Stima Loan, Umeme Pamoja,	30.2%	33.7%	14.0%	11.6%	10.5%

VII. Hypothesis Testing

It is clear from the findings in Table 2 that the relationship between social economic factors and electricity installation is statistically significant ($r = -0.217$; $p < 0.05$). The findings led to the failure to accept the null hypothesis (H_0) that there is no statistically significant relationship between social economic factors effect and electricity installation timelines. Thus the alternate hypothesis was (H_A) that there is a significant statistical relationship between social economic factors effect and electricity installation timelines was accepted.

Table 2; Relationship between Social Economic Factors and Electricity Installation

		Electricity Installation
Social Economic Factors	Pearson Correlation	-.217*
	Sig. (2-tailed)	.045
	N	86
*. Correlation is significant at the 0.05 level (2-tailed).		

VIII. Conclusion

The study concludes that there is need for more emphasis from the KPLC on the social economic factors that lead to electricity installation. Security concerns contribute towards the decision by most customers to have electricity installation than other social economic factors.

IX. Recommendation

The Kenya Power and Lighting Company should find more ways to make electricity connection easier, affordable and faster in order to have successful electricity installations which will increase its customer base and earn it more revenue. This will also enable the company to meet the demand of growing populations across the country and assist their customers in dealing with security issues and in the undertaking of functional duties.

X. Suggestions for Further Studies

The study suggests that further examination be made to establish the influence of social economic factors on successful electricity installation by KPLC in other regions in Kenya.

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