

**MAKERERE UNIVERSITY BUSINESS SCHOOL**

**USAGE LEVELS OF  
TELECOMMUNICATION TECHNOLOGY  
AND THE RURAL HOUSEHOLD LIVING  
STANDARDS.**

**CASE STUDY: NAKASEKE DISTRICT**

**BY**

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THE REQUIREMENT FOR THE AWARD OF A DEGREE OF  
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**NOVEMBER, 2009**

## **DECLARATION**

I, Kiconco Sandra, declare that this is my original work and has never been submitted for the award of a Degree in any University. Any material that is not original work has been clearly stated.

Signed: .....

Date: .....

## **APPROVAL**

This is to certify that this Dissertation has been submitted in partial fulfillment of the requirements for the award of the degrees of Masters of Science in finance and accounting with our approval as University Supervisors

Signed: ..... Date: .....

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## **DEDICATION**

This book is dedicated to my dear parents and my dear brothers who cared to have me educated.

## **ACKNOWLEDGEMENT**

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## ABBREVIATIONS

Y	Income
T.T-	Telephone Technology
HDR	Human Development Report
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
H H	Household
PEAP	Poverty Eradication Action Plan.
ABC	Abstain, before Marriage, Condom use
AIDS	Acquired Immune Deficiency Syndrome.
GOU	Government of Uganda
UPE	Universal primary Education
PPET	Post Primary Education and Training
MOES	Ministry of Education and Sports
UNEB	Uganda National Examinations Board.
TDMS	Teacher Development Management System
PTC	Primary Teachers Colleges
KM	Kilometers
UNFP	United Nations Food Programme
UNHS	United Nations Human Statistical Report
UNDR	Uganda National Development Report
UDH	Uganda Development Human Report
NFNC	National food and National Council
MOH	Ministry of Health

MDG	Millenium development Goals
ICT	Information, communication Technology
MLS	Mili litre
UNFP	Uganda National food policy

## **ABSTRACT**

The study examined the usage levels of Telecommunication Technology and living standards in the rural households in Nakaseke district. The study was prompted by the introduction of the village phones especially the MTN village phone in the local areas focusing on Nakaseke district.

The study used a cross-sectional survey design utilizing descriptive and correlation methods to examine the usage of telecommunication technology on living standards in seven villages in Nakaseke district.

Statistical package for social sciences (SPSS) was used in applying spearman's correlation coefficient which was used to determine the relationship between the study variables. Frequency distribution tables were used to examine the usage of telecommunication technology and living standards of the rural households.

The findings revealed a significant positive relationship between usage of telecommunication technology, communication and access to information, transaction costs, social capital and living standards.

The higher the usage levels of telecommunication technology (village phone), the better the living standards, the more access to information and communication one has together with improved social capital levels, the lower the transaction costs incurred in these villages, and then the better the living standards in terms of income, health, education, sanitation and nutrition.

The District should attract investors from allover the world to come and avail the community with increased reliable and affordable village phones. This will increase the usage of TT which will increase communication and access to information. The result will be transforming society and increases in living standards.



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background

Over recent years, the interest in understanding the economics of information has grown (World Bank, 1999; Hitt and Brynjofsson, 1996; Stiglitz, 1985; Stiglitz and Weiss 1981).

It has been shown in the growth literature that investment in telecommunication technology and their adoption (diffusion) induces high levels of productivity growth and economic performance Nordhaus (2002). Access to telecommunication technology can have a great effect on economic outcomes through a number of channels including lowering the costs of doing business, provision of timely and accurate information about markets and market situations and speeding up the process of knowledge creation Antonelli (1991). The pace of adoption and diffusion of information and communication technologies in general and telecommunication services in particular therefore remains a matter of great policy concern.

Indeed many countries especially in the developing world that had tended to lag behind the ICT revolution have in the recent past moved fast to implement reforms and create an enabling environment to hasten the spread and adoption of ICTS' to major productive sectors and to attain wider geographical coverage.

Village phone usage improves communication and access to information which improves marketability of agricultural and other produce. These positively affect



rural incomes and living standards, reducing poverty, enhancing education, health and sanitation, and nutrition among others (HDR, 2005).

Access to information increased through the use of the phone (village) which also reduces the need to store big inventories for they can be procured when and where necessary and reduce on transportation costs because where travel is necessary to obtain the information; it is availed through the wireless system (Dodd, 2002).

Village phones usage as telecommunication technology makes easy communication and information dissemination such that resident's voluntary cooperation for the common good (social capital) is enhanced as they will know where and when to cooperate for this purpose. This will enhance individual's ability to work together to provide for themselves in projects like maintaining water facilities, schools and road maintenance (Coleman & Fukuyama, 1995).

In Uganda the telecommunication industry was revolutionised with entry of the internet services, mobile phone telecommunication promoted by Celtel (Zain) and MTN Uganda which are now co existing with the UTL land lines mode of telecommunication to promote competition throughout the whole country others are I Telecommunication, orange telecommunication, Warid telecommunication. All these other service providers also have the mobile telecommunication facility which is now being used and is spread all over the country alongside MTN service providers. This is so because in the early years that followed, Uganda pursued a system with a proactive state indeed until the early 1990s the Telecommunications sector was comprised basically of the incumbent state monopoly the Uganda Posts

and Telecommunications Corporation. However this situation changed with the entry of other private companies as mentioned above. Competition usually forces firms to become highly innovative and to set prices that are competitive. This in turn is expected to be reflected in increased consumers' welfare (living standards) as they share in the increasing productivity gains. However the increases in taxes are in turn passed on to the final consumers by the telecommunications service providers in the form of increased tariffs which ultimately results in reduced usage of services (Uganda Communication Commission, 2007).

The Government of Uganda has over the last years put emphasis on infrastructure development to enhance social and economic growth and development, the consensus seems to be that a large role in development is played by infrastructure (e.g. roads, transport, postal and telecommunication services).

MTN Uganda in conjunction with Grameen introduced the village phone project which in India is believed to have boosted the living standards in the rural areas. The usage of telecommunication technology is believed to decrease the distance between economic agents, increase the productivity of inputs and signal proper prices for commodities and through other means exert a positive influence on overall economic growth (Bayes, 1999).

The village telecommunications infrastructure, a subset of the above infrastructure, which has in the past accounted for differential growth rates, expansion of business and reduction of poverty between the rural and urban populations, has turned telephones into production goods, by lowering transaction costs, improving businesses networks and social networks in the rural areas besides improved communication and access to information, which altogether appear to deliver

significant benefits to the living standards of the rural population. The study aimed at finding the relationship between usage of telecommunication technology, communication and access to information, transaction costs, social capital and living standards.

They can now make calls from their village and also receive calls from outside the village that is beneficial to social relationships facilitating family communication between the rural folks and keeping them in touch with the proportion of the town folk who work away from home; this includes the use of the internet services. The telephone is now being used as an instrument for remittance of cash to loved ones / associates (personal observation).

While research has focused mainly on the influence of roads, transport, electricity on the other hand, some studies Bayes, (1999) have dealt with the impact of telecom in rural areas in Bangladesh and Thailand, in Uganda not much has been done to study telecommunication technology and the living standards of the rural households especially after the introduction of the MTN villages phone project, on rural populations.

There is need to study the effect that the usage of the different modes of telecommunication (especially the village phone), communication and access to information, transaction costs, social capital have had on the rural household standard of living so as to reinforce policy development and socio – economic interventions.

## **1.2 Statement of the problem**

Communication is a key factor in the social and economic development of society, globalization of trade and other development activities. This implies that effective and efficient communication at all levels of society is necessary. Bayes et al (1999). The rural areas of Uganda are characterized by poor road networks and inadequate means of transport that limit circulation of information and communication, inhibit growth of social capital and also lead to the increase in transaction costs. The MTN village phone project has offered numerous new opportunities to the rural population. But understanding the effect that the MTN village phone, and other variables like communication and access to information, social capital, transaction costs have had on the living standards of the rural population in terms of income, health, sanitation, education, and nutrition is important in assisting development planners and policy makers in making interventions that are required to achieve positive changes on poverty and the potential of future policies in this sector.

## **1.3 Purpose of the study**

The purpose of the study was to investigate the relationship between the usage of telecommunication technology, communication and access to information, transaction costs, social capital and the standard of living in rural households.

#### **1.4 Research objectives**

- To establish the relationship between usage of telecommunication technology and communication and access to information.
- To establish relationship between usage of telecommunication technology and social capital
- To establish relationship between usage of telecommunication technology and transaction costs
- To establish the relationship between usage of telecommunication technology and living standards

#### **1.5 Research questions**

- What is the relationship between usage of telecommunication technology and communication and access to information?
- What is the relationship between usage of telecommunication technology and social capital?
- What is the relationship between usage of telecommunication technology and transaction costs?
- What is the relationship between usage of telecommunication technology and living standards?

#### **1.6 Scope of the study**

##### **Subject / content scope**

The study examined the living standards of rural communities in terms of their income, health, sanitation, education, nutrition and how emerging telecommunication services have had an effect on them. Usage of

telecommunication technology focused on the village phone use that is to say phone use for the whole community. The study also focused on transaction costs, communication and access to information, social capital.

However, there other factors which may influence living standards but are not part of this investigation include: Age, Housing Tenure, Region, Ethnicity, Gender, and Education among others.

### **Geographical scope**

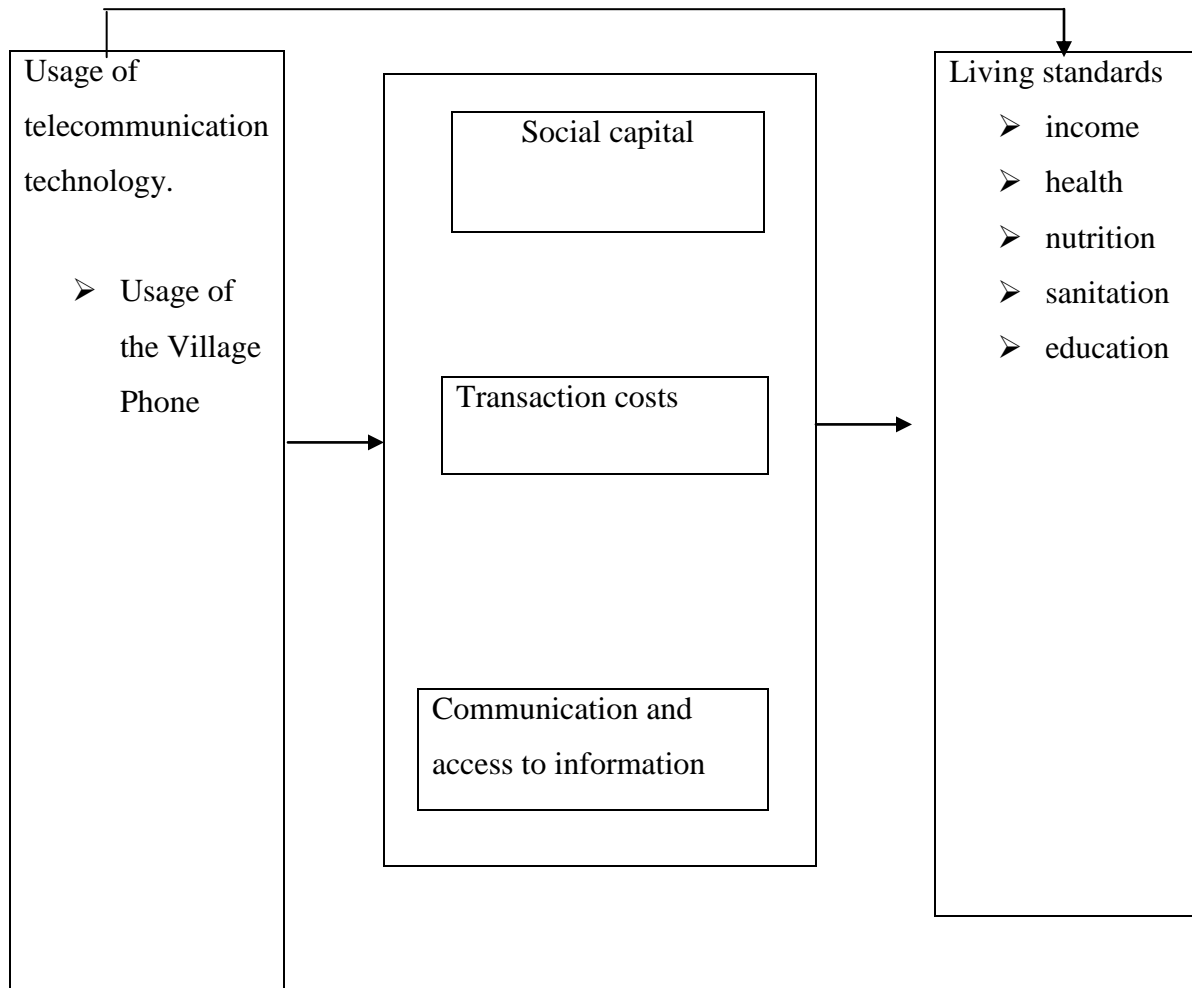
The study focused on one district which is Nakaseke, with seven (7) villages that is to say Kiwoko, Magoma, Kibose, Luteete, Wakayamba, Kasana, Kapeke

### **1.7 Significance of the study (whom the research will benefit)**

The study may be of use to policy makers in developing policy relating to communication and access to information as a tool to eradicate poverty and meet the millennium goal on poverty by 2015, it will help investors in the areas of telecommunication to understand the effect of telecommunication in the rural areas for purposes of planning their investments and identification of business opportunities. Given the resources that rural communities are investing in telecommunications development and the haste with which investment decisions are being made, it is crucial that community planners have access to data that can help them make thoughtful, informed choices and cost-effective decisions. The study will add to knowledge by increasing the understanding of the socio – economic effects and role of telecommunication rural development in Uganda.

## 1.8 Conceptual model

Figure 1: conceptual model on the effect that telecommunications usage has on rural household living standards.



Source: Adapted from Wolford, and Hollifiel, (1997), and Cronin, Govern, Mille, & Parker (1995).

It is believed that usage of telecommunication technology may have an effect on communication and access to information, transaction costs, and building of social capital and effect on the living standards of the rural households in terms of income, health, nutrition, sanitation, and education. Understanding the effect of

these variables on the living standards of the rural population will assist in the social and economic development of the rural areas.



## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

The 1990s have been a period of rapid change in the field of telecommunication technology all over the world and as a result there have been several effects. This chapter will cover a review of literature relating to the socio – economic role of telecommunication in rural development. It will also focus on the effects of telecommunication usage on transaction costs, building of social capital, improving communication and information access and living standards.

#### **2.2 Usage of Telecommunication Technology**

##### **Telecommunication Technology**

Enormous changes in telecommunications have occurred especially during the last two decades. A technological innovation in fibre optics and attendant lower costs has led to the construction of vast networks. Other technology changes include the effects of digitalization; the introduction of new products including internet based services, the convergence associated with the coming together of the broadcasting, information technology and so on (Dodd, 2002).

Cellular service has grown tremendously in the last decade. Competing companies like MTN Uganda, Celtel (Zain), Orange, Hits telecommunication, Warid, i-telecommunication among others have emerged. And here, MTN Uganda with Grameen introduced the village phone project in most rural areas of Uganda. It also emphasized that the usage of the village phone project will greatly improve on the living standards of the rural households.

The telecommunications industry has seen changes in its regulation. The market structure has changed through the replacement of the former monopolistic, vertically integrated telephone companies by a variety of competing firms. These developments have been accompanied by major legislative and regulatory developments in Uganda and many other parts of the World (Cave et al 2003).

The same changes have seen a massive expansion of independent regulatory agencies. Their major role has been to determine the terms of competitive interactions between the existing incumbent operators and new entrants.

Advanced telecommunications technologies have dramatically changed the way business operates, spawning new services and creating an interconnected worldwide community. Furthermore the study aims at understanding the effect that the introduction of the village phone project and its usage by MTN has had on the living standards of the rural households. The whole pace of innovation and the ability to make informed decisions would be notably slow without this capability; new developments in computer technology have had a major impact on telecommunications.

In cellular networks, protocols are used for the function of defining security standards to make eavesdropping difficult.

Local Area Networks (LANs) are connected to other local areas networks over metropolitan area networks (MANS) within cities, and wide areas networks (WANS) across countries (Stiglitz and Weiss, 1981).

Multiplexers and compressions make networks more efficient. Compression squeezes large amounts of data into smaller pipes. Multiplexing adds efficiency by providing the means for multiple devices to share on transmission path.

The most common points of congestion in networks are where data enters and leaves the backbone. Routers responsible for carrying traffic to carriers' core network are being developed to keep up with the speed of fiber optic backbone networks.

New high speed routers and wider availability of fiber optic cabling are bringing capacity closer to end-use commercial locations.

In the telecommunication industry, there exists two way communications between parties that are not in physical contact with each other but by means of fixed line telephony, mobile telephony, cable TV telephony, internet telephony and satellite telephony.

Satellite telephony is particularly important in the village phone operations which the researcher will dwell on in this report.

The current wave of globalization, the trend towards world wide integration of markets is spurred by the development of Information and Communication Technologies (ICTs), including the internet, mobile phones and satellite networks. Access to ICTs has direct effects on raising living standards and quality of life of the poor. The other side of the coin is that lack of access to ICTs and more especially telecommunication technology has a negative effect on living standards of the poor and general masses of Ugandans. The indirect effect on poverty alleviation, through growth and productivity has long been recognized. This study

considered telecommunication technology in line with the above scholars like Stiglitz and Weiss (1981) in the Ugandan context.

### **2.3 Social Capital (SC)**

Social capital (SC) binds the residents of an urban area together. Social capital is the extent to which individuals will voluntarily cooperate for the common good (Putnam, 1995). Social capital signifies a greater willingness to cooperate. Does Social Capital mean a greater willingness to cooperate with one's own family, one's ethnic group, one's neighborhood, one's city or one's state?

#### **Social Capital as an economic resource**

Social capital is a term developed primarily by sociologists to describe features of social organization such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit (Putnam, 1995). The use of the term, capital, however, signifies a productive function. Social cooperation or community is viewed as an economic resource similar to other forms of capital (Coleman, 1994). According to Fukuyama (1995), Social capital is the ability to cooperate. In social groups depends on trust. High trust societies will be able to form large organizations such as transnational cooperation, while low trust societies will be limited to smaller, family based firms. The view of social capital as a resource means that 'community' is a precondition for economic growth. Individuals have economic prosperity, because they form bowling leagues.

According to Sandel (1996), the relationship between community and economic growth is that they are incompatible. Economic growth signals the replacement of market relations for more and more activities of community and family life. Traditional social bonds that prevent the expansion of community exchange relations are viewed as inhibiting economic growth. In Polanyi's concept of the disembodied economy, "the exchange economy tends to dominate other aspects of culture including norms of reciprocity and cooperation Stanfield & Stanfield (1995). While Putman (1995) equates social capital to physical and human capital, it differs in several fundamental aspects. First, it is a social resource. Social Capital inheres in the structure of relations between persons and among persons. It is lodged neither in individuals nor in physical implements of production (Coleman, 1994).

Although it is a resource that has value in use, it cannot be easily exchanged. As an attribute of the social structure in which a person is embedded, social capital is not the private property of any of the persons who benefit from it.

Social capital depends on the degree to which individuals must depend on each other. This interdependence provides an incentive for individuals to form and maintain social relationships. Within these social relationships, norms of reciprocity are developed and fostered. Social capital consists of obligation enforced by social norms e.g. "I do a favour for you, you may believe that you are obligated to do one for me. An unasked favour may create an unwanted sense of obligation in the recipient.

An individual may contribute to social capital by doing a favour for another and creating an obligation. However, social capital does not consist of the set of obligations accumulated by the individual. Rather social capital consists of the social structures and norms of reciprocity that enforce this obligation. Social capital consists of the working rules governing political parties that make the sort of behavior possible. While the politician may contribute to social capital by doing favors, she did not “create” the social norms. Thus in contrast to physical and human capital, the investment process for social capital is not reduced to an individual investment decision.

Recent analysis of social capital has emphasized the erosion of social capital in modern society. According to Fukuyama (1995), the accumulation of social capital is a complicated and a mysterious social process, social capital is viewed as a natural resource similar to oil. It can be depleted, but it is cannot easily be replaced. It is however, a purely human resource.

Social capital is eroded by affluence Coleman (1994). Social capital is destroyed by too much televisim (Putnam, 1993).

Kasinitz and Rosenberg (1996) attribute the decline in social capital to corporate takeouts and the decline of civic leadership associated with homegrown businesses. Fukuyama (1995), Putnam (1995) and Coleman (1994) also assert that government assistance can undermine social capital.

The normative dimensions of social capital

According to Putnam, Coleman, and Fukuyama (1995), the origins of social capital are rooted in culture. Government policies are harmful, if they adversely affect social cohesion. Former President Reagan of the United States of America

and other conservatives are of the view that the origins of social capital are individuals.

Government policies are harmful because they inhibit morally responsible behavior. Government interventions undermine a sense of community.

Individuals who cooperate for the common good contribute to social capital. Cooperation will produce social capital if it is voluntary.

According to Putnam (1993), the norms of reciprocity that characterize social capital exist only in the social organization and networks that are horizontal. Vertical networks link “unequal agents in asymmetric relations of hierarchy and dependence. Voluntary behavior does not take place in the presence of coercive power, and the presence of government brings coercive power. The social capital interpretation means that ‘commodity’ cannot include government and calls for volunteerism.

Indeed since government sponsored services are destructive of social capital private charity and voluntarisms are the only recourse. Since many individuals in distressed neighborhoods are jobless, one might expect that there would be a readily available pool of potential volunteers.

Social capital is an economic resource that is necessary for economic growth. Economic prosperity is prima-facie evidence of a high endowment of social capital. Lack of prosperity is a sign of low social capital. Thus wealthy suburbs must have high levels of social capital and urban ghettos must lack social capital. The lower the level of economic prosperity the more depleted the stock of social capital (Stanfield et al 1995).

In order for individuals to create social capital or develop norms of reciprocity, there are certain preconditions such as common goals and shared work or recreational experiences. Individuals need time for these experiences as well as safe and comfortable places. It is difficult to form social relationships based on trust when there are no safe parks, community centres or public meeting places, when there is no safe and reliable transportation or when there is gunfire in the neighborhood. Police protection, fire protection, personal safety and recreational/community centres all facilitate social capital even if they do not create it and this is the responsibility of Government (Monitor publication, 26<sup>th</sup> May 2008).

Ling uses Robert Putnam's (1993) definition of social capital as "the degree to which a group uses mechanisms such as social networks, trust, reciprocity and shared norms and values to facilitate collaboration and cooperation". Social capital cannot be hoarded by an individual the way economic or cultural capital can; it is valuable only because it circulates. Ling zeroed in on the way mediated encounters might change the ways social networks interacted. Ling and other researchers' for the European unions, multi-country, multi-disciplinary, e-living project showed that "Mobile telephony use has a relatively strong covariance with informal social interaction. That is the more one engaged in an active leisure life of informal social activities such as café visits, theater, the more one used SMS and voice mobile telephony".

The isolation of those who live in central cities from one another and from contact with the greater society represents a failure of government to provide the foundation for economic and civic life.



A closer analysis of social capital reveals that a sense of community is an essential aspect of any culture. Cooperation, social cohesiveness, and norms of reciprocity are aspects of culture that determine the overall provisioning process (Stanfield and Stanfield 1995). However, Himmelfarb (1994) and others are saying much more than that culture can affect the economic wellbeing of a community.

Social capital is a concept that has an economic, a moral and an ideological dimension. Living the term “capital” suggests that this concept is viewed purely as an economic resource a metaphor that recognizes cooperation, and community ties as valuable. However, the ascertainity that a resource can be destroyed by irresponsible behavior reveals its underlying moral dimension (Morone 1996). The ideological aspect is apparent in the promise that government assistance to distressed individuals will diminish social capital and that this resource can flourish only in the absence of government. This study considered social capital in line with the above scholars like Morone (1996) as is in line with the Ugandan context.

#### **2.4 Transaction Costs (TCs)**

Transaction costs are the level of costs incurred to attain some work or work done. When for example a shareholder sells his shares, he has to pay a brokerage fee. This fee is more for small sales thus describing what transaction costs are. In other words the greater the sale the lower the transaction costs incurred. Transaction Costs also mean the amount which may have to be spent to obtain full

information about a company's investment plans, future earnings, and expected dividend payments.

Transaction costs also include ordering costs, carrying costs and inventories which inventories include the transaction motive among other motives.

Transactions in the case of raw materials (or supplies) include the entire costs of acquiring raw materials. They include costs incurred in the following activities, requisitioning, purchase ordering, transporting, receiving, inspecting and storing (store placement). Ordering costs increase in proportion to the number of orders placed.

The transaction motive emphasizes the need to maintain inventories to facilitate smooth production and sales operation. A company should maintain adequate stock of materials for continuous supply to the factory for uninterrupted production. It is not possible for a company to procure raw materials whenever it is needed (Pandey, 1996).

The more frequently the inventory is acquired, the higher the firm's ordering costs. If the firm maintains large inventory levels, there will be few orders placed and ordering cash will be relatively small, thus ordering costs decrease with increasing the size of inventory.

Carrying costs are incurred for maintaining a given level of inventory. They include storage, insurance, taxes, deterioration and obsolescence. The storage costs comprise costs of storage space (warehousing cost), store handling costs and clerical staff service costs (administrative costs) incurred in recording and providing special facilities such as fencing, lines, and racks.

Carrying costs vary with inventory size. The bigger the inventory, the higher the costs Pandey (1996). This study considered transaction costs in terms of how much is spent on phone calls, the distance travelled to make phone calls which is in line with the above scholars.

## **2.5 Communication**

Communication plays a central role in the development of humanity. It facilitates the development of the sectors such as agriculture, health, education, and political empowerment. The development of communication in particular telecommunication technology generally has an effect on the sectors such as commerce, transportation, medical services and education Ministry of Finance, Planning and Economic Development report (1998). This study aimed at understanding the effect that all this has on the living standards of the rural households.

As a nation progresses in the development process, improvements in communication become vital in maintaining linkages throughout the country and enhancing efficiency. This is partly because transportation links may not be adequate to connect all population centers which are scattered around the country. Furthermore, because telecommunication can replace some elements of transportation facilities to be used more effectively, it can reduce the costs required to maintain a given level of development and living standards (Ministry of Finance report, 1998).

Basic telecommunications services in the country are currently provided by Uganda Telecommunication Ltd (UTL), an offshoot of the now split state owned Uganda Posts and Telecommunications Corporation (UPTC). Others are Zain(Celtel), MTN and UTL. This study considered communication in line with the Ministry of Finance report (1998) as is in the Ugandan context.

### **2.5.1 CELTEL UGANDA (CELTEL)**

In September 1993, Celtel Uganda (Zain) became the first private operator licensed to provide telecommunications services in Uganda. It operates 43 stations throughout the country in Kampala, the northwestern districts of Arua, Koboko, Moyo and Adjumani and ‘border to border’ across the country’s Southern belt. The firm provides service to about 35,000 mobile customers.

Within these areas, Celtel (Zain) offers community payphones (known as “Celtel SIMU”) and provides its mobile customers the choice of pre-and post-payment options and value-added services including SMS and voicemail. Most of its customers are prepaid (Lugalambi et al 2004).

### **2.5.2 MTN UGANDA (MTN)**

MTN Uganda was licensed in April, 1998 as the second National Operator after winning a competitive international tender. With its 170 base stations throughout the country, MTN’s current mobile telephone customers are approximately 1,000,000 making it the largest provider in the country (Monitor, 2006).

### **2.1.2 UTL (MANGO)**

Of the mobile phone networks, this was inaugurated last year. It has the cheapest rates per minute compared to Celtel (Zain) and MTN. Its greatest undoing is that it has so far the least area coverage compared to its competitors. This makes it have the least number of customers.

### **2.5.3 LIVING STANDARDS**

The proportion of households living in absolute poverty in Africa measured against national standards is around 50 per cent and increasing. However, measured against the standards of income of the international Dollar per day, the proportion may be as high as 80 to 90 per cent (AMREF, 2001).

Poverty is multi-dimensional and varies with locality, age and gender. Communities observe poverty as lack of access and control over assets, powerlessness, alienation, disease, literacy and death. The poor feel desperate, struggling to earn a living but with little success. Lack of employment opportunities and inability to afford basic social necessities are some of the factors perpetuating poverty.

Household poverty takes centre stage as the basic cause of ill health and premature death. MTN introduced the village phone project with the aim of improving on the standards of living of the rural households. This study aimed at understanding the effect that this has had on the living standards of the rural households.

The poor are ten times more likely to die young (under 15 years) compared to the rich, nine times more likely to die of communicable diseases and twice as likely to die from accidents and injury.

Poor women who are more at risk in general, are up to two hundred times more likely to die of causes related to pregnancy and childbirth. They cannot access adequate reproductive health and poverty; ill health seriously undermines poor people's chances of escaping from poverty and taking advantage of any opportunities.

Poor people believe in 'education' as a means of improving their social and economic status, but barriers such as school fee, transport, clothing, and textbooks prevent their children from attaining this goal.

The increasing school drop out rate and dismal performances are but an indication of increasing poverty. Secondary school education is beyond the reach of poor families.

Poverty has been blamed for the escalation of AIDS among the youth. Reproduction health problems of young girls are linked to poverty because girls are often lured by older men who demand sex in exchange for money and gifts. It has been observed that the child, who is seduced, generally comes from a needy family. Malnutrition is rampant in poor households. Absence of food and money to purchase food are the main reasons for nutritional deficiencies (AMREF, 2001).

Household poverty impacts negatively on numerous projects causing slow implementation and undermining community participation and behavioral change.

Poverty reduction therefore is essential to securing good health among the poor. The study considered living standards in terms of Income AMREF (2001) as is in the Ugandan context.

#### **2.5.4 Income**

Uganda has put in place the Poverty Eradication Action Plan (PEAP) to promote economic growth, eradicate poverty and achieve better income distribution.

Reversing the upward trend in income, poverty as well as the attainment of the Millennium Development Goals (MDGs) has been assisted by the PEAP revision process involving wider consultation and consensus building.

PEAP has helped the country achieve economic growth and its social objectives. The social objectives have linkages and synergy with the internationally agreed millennium development goals and the new partnership for Africa's Development (NEPAD) principles. NEPAD, likewise, is a pledge by Africa leaders to eradicate poverty.

The percentage of people living in poverty is estimated at 30% (Uganda National Household Survey 2002/03), corresponding to eight point nine million (8.9m/=) Ugandans.

Between 1900/00 and 2002/03, the incidence of poverty increased more in rural areas than urban areas. The poor increased from 7.0 million in 1999/00 to 8.5 million in 2002/03. Rural areas remain markedly poorer than urban areas and register lower growth in mean living standards. The proportionate rise in poverty however is high in urban areas 0.3 in 1999 to 0.4m in 2002/03 (about 33%) compared to less than 22% in rural areas.

The rise in poverty is particularly marked for those households practicing crop agriculture. The combination of growth for the more affluent and decline for the rest leads to a worsening of inequality statistics. However to avoid over reliance on agriculture by the rural households that did not seem to result in better standards of living, MTN with Grameen introduced the village phone project in Uganda with the aim of improving the living standards of the rural households through the increased usage of telecommunication technology as was seen earlier, the Grameen project performed greatly in the Indian set up. This study aimed at understanding the effect that it has had on the living standards of the rural households.

Crop farmers in Nakaseke among many other areas have been hit by lower productive prices of agricultural products like coffee, vanilla, banana and so on (background to the budget, 2004).

Income inequality increased by 18% between 1992/93 and 2002/03 and 23% between 1997 and 2002/03. The major cause of widening gap is the difference in asset base. Households with the lowest asset base have been unable to increase their investments, partly because of insecurity in some areas. Other factors include poor producer prices and low human development indicators.

Ugandans experience rural urban and regional income inequalities. The solution lies in increasing agricultural and non-farm productivity and income; providing a conducive environment for private investment growth and increasing access by the poor to productive assets and basic services as well as amenities.



## **Enhancing Incomes through agriculture**

It has to be emphasized that most households in Uganda including those in Nakaseke, derive their income from agriculture. The agricultural sector however faces constraints that explain the increase in poverty, Chief among these is low price levels and the production of low value crops. There also exists limited access to agricultural support services such as crop and veterinary extension services and food processing technology. Limited access to infrastructure such as electricity and water infrastructure, limited market, telecommunication technology Information and proliferation of local taxes inhibit the development of vibrant agricultural sector with linkages to other sectors of the economy.

Given the extent of the structural weaknesses, prospects for reversing the income poverty lie in addressing these constraints. The Government identifies more strategic approaches to enhance the provision of public goods for agricultural production, the areas of agricultural extension and technology development, marketing and preservation of the natural resource base (soil and forests).

In order to improve production, competitiveness and income, the Government focuses on modernizing agriculture and the provision of infrastructure including roads, electricity and railways. This necessitate better implementation of the Plan for Modernization of Agriculture (PMA), the Medium-Term competitive Strategy (MTCs) for the private sector that includes the Strategic Exports Program (SEP).

An Agricultural Sector Investment Plan (ASIP) is to provide a coherent framework for public investment. Government has invested in demand driven agricultural extension service delivery and research into improved technologies and methods of production. The NAADS programme present in Nakaseke with

its better yielding crops is providing effectiveness of extension services. Farmers through extension are helped to produce market and base their choice of crops on good market information.

The ASIP involves training farmers in agronomic practices, post-harvest handling and new techniques and technologies for farmers and fishermen to improve agricultural productivity (Background to the Budget, 2004).

A national agricultural research policy to promote the delivery of high quality and effective agricultural research services has been developed as well as the Marketing and Agro-processing Strategy (MAPS).

Government has established the Uganda Community Exchange (UCE) that provides a meeting place for commodity buyers and sellers and the warehouse receipt system in which a receipt can be used as collateral for loans. The cooperation movement is being invigorated so that farmers can realize better prices, something that enhances their incomes.

Government invested in rural electrification, encourages private investment and provides subsidies through the rural electrification fund. This is important for the development of agro-based industries. The Government will continue with path breaking public intervention to promote strategic exports and encourage large scale farming by the private sector while respecting environmental and employment safeguards.

### **Accelerating poverty reduction**

Using national Household income and expenditure data, we estimate the potential impact on Income and poverty of doubling the national Income share of the

poorest 20% of the population through a transfer from the top 20%. Shifting small share of the Income to the top 20% could lift large numbers of people above the poverty line (HDR, 2005).

In society that attaches greater weight to welfare gain for the poor than the rich the transfer might be considered welfare enhancing for the whole of society even if some lose.

Another route to improved distribution is progressive growth. This is a positive sum process. In which anybody gains but the poor gain proportionally more. Progressive growth is a dynamic process in which poor people produce their way out of poverty, while increasing their contribution to national wealth.

The smaller the Poor's share of any increment to income, the less efficient growth is.

Across much of Africa the challenge then is not just to accelerate growth, but to ensure that poor people contribute to the growth process, though increased output and rising productivity, and capture a bigger share of increments to growth than they do now.

Public policy this means a more attention to small-holder farmers, to marginal rain-fed agricultural areas; and to public investments to build the assets of the poor and the infrastructure serving them (HDR, 2005).

The role of the private sector is also critical for pro-poor growth. Small medium-size enterprises play a pivotal role as employers, as supplier of inputs and as a link to markets. Private firms can contribute to poverty reduction by empowering people, extending choice and providing a broad range of goods and services.

Village phone providers should operate programs that serve many more people, enabling micro-enterprises to operate more efficiently by improving access to market information.

The absence of micro enterprises can reduce competition by driving up costs of inputs and driving down prices for goods sold by communities in remote areas.

The high cost of government regulation and limited access to credit are among the major constraints on small scale private enterprises' ability to operate as a more dynamic force for poverty reduction.

### **Achieving pro-poor growth**

Many strategies for narrowing inequality will have positive effects in growth. Increasing poor people's share of growth should be a central part of strategies for achieving the MDGs and wider human developmental goals (HDR, 2005).

There is no single path for achieving this objective, closing gaps in educational opportunity is a critical starting point. Inequalities in income, health and opportunity, including opportunities to participate in society and influence political processes. Education has the potential to act as equalizers of opportunity, as well as force for economic growth and efficiency.

But that potential can only be unlocked through public policies that systematically remove the social, economic and cultural barriers facing disadvantaged groups.

Deep inequalities in health and the increased vulnerabilities associated with unequal access to health care are associated with deep differences in opportunities.

Respect episodes of ill-health undermine productivity, diminish the ability of children to benefit from education and lock House holds into cycles of poverty. Overcoming these inequalities in health requires public investment to increase the supply of good quality-education and measures to reduce obstacles to demand. Inequalities in income reflect the distribution of assets and opportunity and the operation of markets. But they are influenced by government taxation and spending. In many countries fiscal transfers are already narrowing extreme inequalities. From a human development perspective the fiscal transfers with the highest reforms are investments that build capabilities and provide protection during periods of acute vulnerability (HDR, 2005).

Fiscal transfer is one mechanism for raising the income of the poor above the level dictated by current growth and distribution patterns.

Pro-poor growth requires a public investment focus on the markets in which poor people operate. The challenge is to shift the policy focus to the small holder producers and to the more marginal areas that account for the bulk of poverty. The problem is that the production of food staples and cash crops in poor areas is constrained by limited access to markets, high transport costs and restricted access to credit. Compounding this problem, poor people especially poor women lack the assets, legal entitlements and political form needed to raise productivity and income.

Cash and crop transfers from poor tenant farmers to landlords are a major source of income poverty. Yet the poor don't use the legal system to pursue claims. The main reason in the median cost of a dispute is 20% higher than the annual average HH income of the poorest tenant farmers.

### **2.5.5 Health**

The burden of disease remains high. Pre-natal and maternal conditions, malaria, acute respiratory tract infections and AIDs, together account for over 60% of the total national death burden (Background to the Budget, 2004).

Although government has scored by abolishing cost sharing a factor that has increased the poor people's access to health care, still quality services eludes the poor.

Among the areas that require urgent improvement and action is drug availability, presence of health staff access to health services, transport for referral patients, and access to family planning services, strengthening preventive health care e.g malaria and HIV/AIDS and poor sanitation diseases like dysentery and so on.

The health situation is bad nationally but worse in rural areas like Nakaseke where income, education, health centres and general awareness are at low levels than those in urban areas (MOH report, 2004).

#### **Public Policy**

Reducing the deeply rooted inequalities based on gender, income and region that generate unequal child mortality rates requires wide ranging reforms.

Public policy has a critical role to play in addressing the three "A"s i.e. Accessibility, Accountability, Affordability for reducing inequality.

**Access**

The poor often live in areas that are sparsely covered by Basic health services or caused by facilities that lack drugs and trained staff. Chronic under financing is part of the problem. Providing basic health care coverage in a low income country like Uganda costs an estimated \$ 30-40 per capita. Across much of Africa spending is less than \$6 per capita. Under these conditions, even where facilities exist, they are likely to lack essential medicines. This is the case with the health centre in Uganda Background to the (Budget, 2004).

**Affordability**

Charging for basic health services increases inequality. Payments for health care can represent a large share of the income of the poor people, leading to reduced demand, uncompleted treatments or increased debt. High levels of house hold spending not only deter use of services, but by one estimate have pushed three million (3m) in Viet Nam into poverty, removing fees can improve equity; by 80% with half of the increase among the poorest 20% of the population . When Uganda did that in 2001, visits to public health facilities raised by 80 % (HDR, 2005).

**Accountability**

Even where public health services are available, they are often not used by poor people. Over half of health centres are closed during periods when they are supposed to be open. The open facilities lack a trained staff on site. This has compelled many poor people to turn to local herbs and the traditional witch

doctors who extort the poor people's savings. Developing more accountable health system can dramatically improve access and health indicators Human Development Report (2005). The usage of telecommunication technology which is believed to decrease the distance between various kinds of people, lower transaction costs, and thus increase on the total amount of input in the production sector, social capital sector and also increase on communication and access levels led to improved standards of living in the Indian set up as introduced by Grameen. Therefore this study aimed at understanding the effect that the usage of telecommunication technology would have on the living standards of the rural households in Nakaseke.

### **Unequal chances, health inequalities and the MDGs.**

Life chance inequalities are unjust and bad for the MDGs; deep inequalities are holding back progress in many areas.

The MDG target of reducing child deaths, by two-thirds will be missed by a wide margin on current trends. In most countries the poor account for a far large share of child deaths than is commensurate with their share of the population.

The rate of child mortality is falling much more slowly among the poor than the average rate of decline in most countries; Cross-country data suggest that the child mortality rate among the poorest 20% is falling at half the average rate of decline, so that the mortality gap between rich and poor children is widening.



In Zambia child mortality among the richest 20% fall by 6% a year in the period 1995 – 2000 three times as fast as for the poorest 20%. In Uganda, there was no decline for the poor while for the rich the figure was 1.2% decline.

Closing the gap in child mortality rates between the poorest 20% and the national average would cut child deaths by 60%, saving about 6.3 million lives a year. This would put the world on track of achieving the MDG target (HDR, 2005). This suggests that the failure of national goals and the international community to overcome inequalities based on wealth, costs the lives of more than 6 million children a year.

### **Gender**

Reducing gender inequality would have a catalytic effect on cutting child deaths. Overcoming wider gender inequalities would have even more pronounced effects because of the negative links between maternal nutritional deprivation and child mortality. There exists under weight women in much of Africa and child deaths linked to deficiencies in nutrients and vitamins exist in Africa and Uganda in particular (HDR, 2005).

Greater gender equity would act as a powerful force for reducing child mortality. Using cross-country data, the international food policy research institute has estimated that equalizing the access of men and women to Education, nutrition, income and property rights could reduce the underweight rate among children less than three years old by 13% points in South Asia, meaning 13.4 m fewer

malnourished children vulnerable to early mortality. For sub-sahara Africa, child malnutrition would fall by 3% points, with 1.7m fewer malnourished children. The pathways through which the empowerment of women influence child well being include wider spacing of births through enhanced control over fertility, greater use of health facilities and better knowledge of health interventions.

### **2.5.6 Nutrition**

#### **The Uganda Food and Nutrition Policy**

Nutrition is one of the priority components of National Minimum Health Care package being implemented under the Health Sector Strategic Plan (HSSP). The mandate of Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) is to support, promote and guide the production of crops, livestock and fish so as to ensure the improved quality and quantity of agricultural produce and products for domestic consumption, nutrition food security and exports (MAAIF et al, 2003).

MAAIF and MOH are also promoting diet diversification plus other food based strategies for a healthy and productive population. Food security and nutrition issues are multi-sectoral involving public and private stakeholders. To coordinate the various stakeholders, government in 1987 established, the current National Food and Nutrition Council (NFNC). The NFNC also has the function of advising government on the formulation of the Uganda Food Nutrition Policy (UFNP), providing guidelines on the implementation of the policy, research, monitoring and evaluation.

## **Situational Analysis**

The population of Uganda is estimated at thirty (30) million, whose majority live in rural areas. The infant mortality rate is 88.4 per 1000 births while the less than five mortality rate is 152 per 1000 live births. The maternal mortality ratio (MMR) is close to 495 per 100,000 UDH report (2001). Life expectancy at birth in 1991 was 48.1 years for females 50.5 years, males 45.5 years. The average adult literacy in 1995 was 62%, with the rate for males being 74% for females 50%. The average per capita income is approximately US\$ 300 (poverty status report, 1999).

In 2000, 35% of the population was estimated to live below the poverty line, a figure that rose to 38% in 2002 UNDR (2000) and Budget Speech (2004), while the unemployment rate was calculated to be 7.4% in 1997.

The country produces a wide range of crops including cereals such as sorghum, root crops such as sweet potatoes, cassava and Irish, bananas and pulses like beans and peas.

It produces animal products from dairy and beef animals, poultry, sheep, goats, pigs, rabbits and edible insects like white ants, grasshoppers among others. The inland fresh water bodies provide large quantities of fish. The available food stuffs of both plant and animal origin potentially offer a balanced diet. Subsistence farmers produce most of the food.

It is however disturbing that despite the variety of food stuffs, the country and Nakaseke in particular still faces problems of malnutrition and there exists pockets of famine and hunger. There are high levels of childhood under-nutrition

and 40% of deaths among children below 5 are stunted, 4.0% are wasted and 22.5% are underweight (UNHS report, 2001).

Micro-nutrient deficiencies are common, especially vitamin A deficiencies which has a prevalence rate of 5.4%, iron deficiency anemia is slightly more than 50%, while 10% of the women population are undernourished. The total goitre rates ranges from 60-70%.

The causes of this high rate malnutrition include inadequate food intake, pre-disposing disease, ignorance, poverty, taboos, life styles and the effects of HIV/AIDS.

There is an increasing incidence of diet-related, chronic, non-communicable diseases such as hypertension, diabetes and heart diseases.

Poverty is one of the determinants of malnutrition, so under nutrition and the lack of enough food, may lead to unproductively (MAAIF et al, 2003).

### **The Nutrition Policy**

The UNFP and its associated strategies have been formulated within the context of the overall National Development policy objective which is to eradicate poverty.

This is paramount given that poverty is one of the determinants of malnutrition and the recognition of the vicious cycle between poverty and malnutrition throws light on their relationship. The policy is in line with the Plan for Modernization of Agriculture (PMA) which seeks to ensure food security, create gainful employment, increase income and improve the quality of the rural poor. The policy is also in line with other national policies which include; the National

Health Policy, vision 2025, the national gender policy, population policy, National Plan of Action for children, the decentralization policy, UPE and the environment policy,. The policy and strategies are also in line within the context of international treaties, convention and resolution to which Uganda is committed (MAAIF, 2003).

### **2.5.7 Sanitation**

#### **Sanitation facilities**

Functional sanitation facilities in Nakaseke are mostly pit latrines and VIP latrines in a few urban centres. Water closet and newer technologies such as Ecosan and mobilets are not yet prevalent in Nakaseke.

#### **Excrete Disposal**

The demand for toilet facilities is still very high following the increase in the population as well as the increasing awareness of the population of the need to follow proper hygiene conditions. People's efforts have focused on construction of toilet facilities to fight diseases. Emphasis has been on facility development with less focus on changing practices in sanitation and hygiene because some households lack this facility completely (MOES Report, 2006).

#### **Facilities for Disabled Pupils**

Some homes have disabled children but very few if any offer separate toilets facilities for these children. Poor hygiene of toilet facilities rendered shared toilet facilities not user friendly for disabled, denying them access to services.

### **Physical structure of toilet facilities**

Most structures in rural areas are not adequate for use, stepping slabs are absent, floors are made of wool, and wood, rendering facilities difficult to be kept clean. Construction and maintenance challenges in some areas included poor soil texture, high construction costs, poor community involvement and slow cultural acceptance for new technologies.

### **Toilet Facility hygiene**

Hygiene is poor. Floors are wet and dirty while walls have cracks and sometimes smeared with faeces. Toilet surroundings especially those in semi and urban centres in Nakaseke are littered with faeces an indication of poor sanitation culture but also as a consequence of users avoiding use of dirty facilities. Toilet facilities were within standard distance from major households but poor hygiene led neighbors to complain of close proximity to these facilities.

### **Water Sanitation and Hygiene**

#### **Quantity of water in schools**

The majority of schools use inadequate quantities, less than five (5) litres per day, pupil/student per day. This means that meeting necessary hygienic standards is very difficult. This situation is harder the further you move away from rural areas to urban areas (MOES Report, 2006).

### **Water sources and distances**

Many homesteads and schools in Nakaseke obtain water from boreholes. Most water services were further than the recommended distances of 0.5km from the school.

### **Hand washing facilities and practices (HWF)**

Hand washing facilities (HWFs) next to toilet facilities are found in few homesteads let alone schools. Some homes with hand washing facilities do not use them as they are dry. Containers are small meaning that they can be used for a short period and soap is not used or is rarely used. Hand washing practice remains inadequate.

### **Sanitary materials**

Most pupils do not use hygienic disposable sanitary materials. The use of non-disposable materials (clothes) poses a possible health hazard especially in day schools where it may be difficult to change them during day. Disposal of used pads is a problem in most cases for they are thrown into pit latrines, predisposing foul smell and difficulties for emptying latrines (MOES Report, 2006).

## **2.5.8 Education**

This section discusses Universal Primary Education (UPE), University Secondary Education (and Secondary Education) in general, and post secondary education to a limited extent.

## **Universal Primary Education (UPE)**

Universal Primary Education (UPE), introduced in Uganda in 1997, refers to the provision of basic education to children of school going age (6-12) where implementation has focused on the issue of access, equity, and relevancy of education.

UPE main goal is to provide the minimum necessary facilities and resources to enable children to enter and remain in school and complete the primary education cycle.

Its policy objectives include establishing, providing and maintaining quality education as the basis for promoting human resource development; transforming society in a fundamental and positive way; providing the minimum facilities and resources to enable every child to enter and remain in school until the primary cycle of education is complete. Making education equitable in order to eliminate disparities and inequalities in income, health and so on; and ensuring that education is affordable by the majority of Ugandans.

By aiming to achieve UPE, government would be fulfilling its mission to eradicate illiteracy while equipping every individual with the basic skills and knowledge to exploit the environment for both self and national development. Since the programme was launched, enrolment has risen.

## **Girl Child Education**

UPE has enabled Uganda to make great improvement towards education for all and the achievement for gender equality in the educational system.



The government focuses on getting girl children in school, create a learned friendly environment and keep them (girls) at school at the tender years. The Ministry of Education and Sports report (MOES) and her partners have made a stride into solving the problem of the girl child drop out rates.

Education of girls develops the role of women in family, society and national levels. It is a correct path in Uganda's journey to social and economic development. Uganda's development partners like USAID, UNICEF, the Straight Talk Foundation and Forum for African Women Educationalists (FAWE) have complemented government efforts in providing education for girls.

### **Empowering Teachers and Communities to provide quality education**

In order to give quality education to students, the government of Uganda rationalized Primary Teacher Colleges (PTCs) to a total of forty five.

Twenty three, these are core PTCs, under the Teacher Development Management System (TDMS) and train both pre- service and in-service teachers.

The TDMS programme brings innovations in Primary teacher education instructions in teacher administration and professional support to teachers who are already in the field. This is meant to improve the capacity of teachers to deliver more professionally organized and quality teaching to students.

The programme uses coordinating centre tutors (CCTs) to train centers in modern teaching methodologies, life skills, induct them in the new primary school curriculum and the use of instructional materials.

The programme involves community mobilisers who are upon leaders in the training, so as to mobilize parents to pay special attention to education as a way of uplifting their living standards.

### **Challenges of UPE**

UPE face many challenges, chief among these are large numbers, retention, feeding, the girl child and attrition of teachers. The researcher intends to throw some light on each of them.

#### **Large numbers**

- The number of pupils in primary schools is expected to have reached 8.4m/- by 2006 with new pupils coming from three sources.
- Scaling the drop outs/improving retention.
- Enrolling those currently not in school under the policy on the disadvantaged
- Population growth.

These numbers have implications for resource availability and budget allocation among the sub-sectors (MOES Report, 2006).

#### **Retention and survival rates**

Although the main goal of UPE is to enable children to complete the seven (7) year primary cycle, drop outs threaten it (UPE). The main causes of drop outs are lack of interest, accounting for about 43% of dropouts; next in family

responsibilities, which account for 14% of the dropouts (The Education Statistical Abstract, 2002).

The perception that the child has had enough schooling account for 25%. The highest percentage of dropouts occur during the transition from P1 to P2 and P6 to P7, 32% pupils dropouts before P2, another 32% dropout between P6 and P7. The result is a low completion rate of those who started P1 in 1997 just 33% reached P6 and 22% reached P7 in 2003 (MOES Report, 2006).

### **The Girl Child**

The ratio of boys to girls in primary schools has improved from 55:45 in 1986 to 51:49 in 2003 MOES report (2006). However, equity still needs to be achieved. The girls perform worse than boys and are less likely to make the transition to post primary education and training institutions.

### **Post Primary Education and Training (PPET)**

The need for post primary education has been heightened by the success of the UPE programme that's rapidly increasing numbers of pupils; seek opportunities to continue with their education.

The sustainability of UPE depends on improved access to post primary institutions. It has to be emphasized that participation at secondary level is now the major determinant of life changes and a major source of inequity.

Uganda is committed to achieve gender equity at primary levels as one of the millennium development goals. Whilst this goal has largely been achieved at

primary level, there are many more boys enrolled than girls in secondary education. National competitiveness in high value added modern sector economic activity, depends on post primary skills and competencies associated with abstract reasoning analysis, language and communication skills and the application of science and technology. These factors have compelled government to invest in Universal Secondary Education (USE).

The case for investing in PPET is that these with secondary schooling increase their chances of formal sector employment. Post Primary education services are in demand, valued by the population and are capable of contributing to improved equity and income generation.

The GOU is committed to social development, a policy designed to alleviate poverty. In addition to all this, the Government has also removed the monopoly of the provision of telecommunication technology services in Uganda such that MTN now spread in the villages introducing the MTN village phone project so as to improve on the living standards of the rural households. Post primary training is likely to contribute to this goal if pursued in an equitable way. Graduates from post primary institutions are likely to continue to have higher earnings than those completing primary school hence the need by government to construct secondary schools in each Gombolola in Uganda (Lewin, 2002).

**2.6 Usage of TT and Communication and access to information** Usage of village phones has an effect on communication and access to information. Village phone usage improves communication and access to information which improves

marketability of agricultural and other produce. These positively affect rural incomes and living standards, reducing poverty, enhancing education, health and sanitation, and nutrition among others (HDR, 2005). The study considered the effect of usage of telecommunication technology on communication and access to information in line with (HDR, 2005).

### **2.7 Usage of TT and Transaction costs**

Village phones usage make communication timely and easy. Access to information increased through the use of the phone (village) which also reduces the need to store big inventories for they can be procured when and where necessary and reduce on transportation costs because where travel is necessary to obtain the information; it is availed through the wireless system Dodd (2002). The study considered the effect of usage of telecommunication technology on transaction costs in line with (Dodd, 2002).

### **2.8 Usage of TT and social capital**

Village phones usage as telecommunication technology makes easy communication and information dissemination such that resident's voluntary cooperation for the common good (social capital) is enhanced as they will know where and when to cooperate for this purpose. This will enhance individual's ability to work together to provide for themselves in projects like maintaining water facilities, schools and road maintenance (Coleman & Fukuyama, 1995).

This in turn improves marketability of rural produce, improve terms and living standards.

Village phones make easy formation of networks, norms and social trust as consultation is easy and timely. These facilitate coordination and cooperation for mutual benefit. The study considered the effect of usage of telecommunication technology on social capital in line with (Coleman & Fukuyama, 1995)

## **2.9 Usage of TT and living standards**

Increased usage of village phones has an effect on rural income, health, nutrition, sanitation and education. These factors influence greatly the living standards of rural households. Where and when rural incomes improve, health, nutrition, improve with a positive contribution to living standards. This will bring about social and economic development of rural areas AMREF (2001). The study considered the effect of usage of telecommunication technology on living standards in line with (AMREF, 2001)

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter covers methodology used in carrying out the study which includes research design, study population, measurement of variables and data analysis, sampling design and sample size

#### **3.2 Research design**

The study used a cross – sectional survey design utilizing descriptive and explanatory methods to examine the effect of usage of Telecommunication Technology (village pay phone) on living standards. The cross sectional survey design was the most appropriate for snap shot study using primary data.

#### **3.3 The study population**

The study population consisted of households in Nakaseke-Kibose, Kapeke, Luteete, Magoma, Kasana, Kiwoko, Wakajamba villages which total to 4,748 in number. Sampling units were the households in the respective villages.

#### **3.4 Sampling design and sample size**

The sampling frame was the L.C register of all households in the village. The sample size of 117 households was used. Sample size of 117 was arrived at by getting the proportion of the number of households in the seven villages as shown in table 1 below. Sample size of 117 was sufficient as supported by Bailey (1994) with, sample size of 100 being sufficient for most researches and also Roscoes

(1975) rule of thumb states that sample size more than 30 and less than 500 is sufficient. Convenience sampling was used to select the 117 respondents.

**Table 1: Showing the sample of the seven selected villages**

<b>Village</b>	<b>Number of households</b>	<b>Sample size</b>
Kibose	787	19
Kapeke	693	17
Luteete	521	13
Magoma	989	24
Kasana	837	21
Kiwoko	400	10
Wakayamba	521	13
<b>Total</b>	<b>4,748</b>	<b>117</b>

Source: Adapted from Uganda Bureau of Statistics Census Publication (2002).

### **3.5 Data collection methods and sources of Data**

This study was based on primary data on usage of telecommunication technology, transaction costs, social capital and living standards all of which was collected through a questionnaire and observations. The questionnaire was developed based on the nominal, ordinal and interval scales.

### **3.6 Measurement of variables**

The measurement of the variables was done using the following measures:

- Usage of telecommunication technology (village pay phone) was measured in terms of the number of times households used the MTN village phone.



- Communication and access to information, Transaction costs, and Building Social Capital was measured on a 5 point likert scale.
- Living standards were measured using Income, Sanitation, Education, Health, and Nutrition on a 5 point likert scale which were later ranked and aggregated.

### 3.7 Validity and reliability

#### Validity of the instrument.

The validity of Instruments was performed by incorporating comments made by the supervisors and experts in the area of study on all the study variables.

#### Reliability of the instrument

Cronbach Alpha test was used to determine the internal consistency of the likert scales used to measure the study variables as shown in the table 3.1 below

**Table 3.1: Reliability Test**

<b>VARIABLE</b>	<b>CRONBACH ALPHA COEFICIENT</b>
Income	.6470
Health	.6684
Nutrition	.6303
Sanitation	.6636
Education	.6986
Usage	.8980
Communication and access	.9320
Transaction costs	.8769
Social capital	.9283

*Source: Primary Data*

The Cronbach coefficients in Table 3.1 above are all above 0.60 which indicates that the likert scales used to measure the study variables were consistent and therefore reliable.

### **3.8 Data analysis**

Data was statistically analyzed using SPSS (Statistical Package for Social Scientists), the data was entered, then analysed to determine the relationship between usage of T.T. communication and access, to information, transaction costs, social capital, and living standards. Spearman correlation coefficient was used because of the categorical, ordinal nature of the variables and since it deals with the non parametrical it was used to determine the relationship between study variables, frequency distribution tables, cross tabulations and Chi square test were used to examine the usage levels of telecommunication technology and living standards of rural households.

### **3.9 Limitation of the study**

Time and finance posed the major constraints of the study. The researcher overcame the financial problems by utilizing accumulated personal savings and a loan from stanbic bank. Time constraints were solved by employing a research assistant to do some of the field work. However all this did not affect negatively the validity of the data collected.

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND INTERPRETATION

#### 4.1 INTRODUCTION

This chapter presents general information, descriptive statistics and inferential statistics.

#### 4.2 GENERAL INFORMATION

##### 4.2.1 GENDER

**TABLE 4.1:- RESPONDENTS GENDER.**

	Frequency	Percentage
Male	68	58
Female	49	42
<b>Total</b>	<b>117</b>	<b>100.0</b>

*Source: Primary data*

The majority of households were males constituting 58% and only 42% females.

##### 4.2.2 MARITAL STATUS

**TABLE 4.2: Marital Status**

	Frequency	Percent
Married	80	68.4
Single	19	16.2
widow(er)	13	11.1
Divorce	5	4.3
<b>Total</b>	<b>117</b>	<b>100.0</b>

*Source: Primary Data*

Table 4.2 above shows majority of 68 % households as married, 16% single, 11% widower and only 4% divorced. This implies that most of the households are people with families.

### 4.2.3 QUALIFICATION

**TABLE 4.3:- QUALIFICATION**

	Frequency	Percent
Certificate	37	31.6
Diploma	23	2.6
Degree	1	0.8
Others	76	65
<b>Total</b>	<b>117</b>	<b>100</b>

*Source: Primary Data*

Most of the households 65% had other qualifications other than certificate 31.6%, Diploma 2.6 % and Degree 0.8%.

### 4.2.4 MAIN OCCUPATION OF RESPONDENT

**TABLE 4.4:- MAIN OCCUPATION**

	Frequency	Percent
Farmer	77	78
Driver	10	1
Produce dealer	7	7
Shopkeeper	4	8
Wage earner	6	6
<b>Total</b>	<b>114</b>	<b>100.0</b>

*Source: Primary Data*

Table 4.4 indicates that 78% were farmers, 8% shop keepers, 7% produce dealers, 6% wage earners and 1%. This implies that most of the household main occupation is farming. Other occupations of households are food vending, traditional Doctors and welders as presented in table 4.5 below:

**TABLE 4.5: Other Occupation**

Occupation	Frequency	Percent
Food vendor	1	33.33
Traditional doctor	1	33.33
Welder	1	33.33
<b>Total</b>	<b>3</b>	<b>100.0</b>

*Source: Primary Data*

### **4.3 USAGE OF TELECOMMUNICATION TECHNOLOGY AND LIVING STANDARDS LEVELS OF RURAL HOUSE HOLDS.**

Frequency distribution tables cross tabulation tables and chi square tests were used to establish and test the usage of Telecommunication Technology levels and living standard levels of the Rural House Holds as shown in tables 4.6 below.

#### **4.3.1 USAGE OF TELECOMMUNICATION TECHNOLOGY (Village pay phone)**

The usage of Telecommunication Technology by the rural House Holds using the village pay phone in their communication indicates that most of the respondents (63%) used the village pay phone for at least once a week while 37% spent a week without using the village phone as shown in table 4.6a below:

**Table 4:6:- Number of times a week local calls are made**

	Frequency	Percent
None	43	36.8
1-<5	71	60.7
5-<10	3	2.6
<b>Total</b>	<b>117</b>	<b>100.0</b>

*Source: Primary Data*

Table 4.7 indicates that most of the respondents (62%) did not make international calls in a week and only 38% made at least one call in a week.

**Table 4.7: Number of times a week international calls are made**

	Frequency	Percent
None	72	61.5
1-<5	45	38.5
<b>Total</b>	<b>117</b>	<b>100.0</b>

*Source: Primary data*

This implies that usage of telecommunication technology (Village phone) by rural households is above average on local calls and below average on international calls.

### 4.3.2 LIVING STANDARDS

Living standards of rural House Holds were measured in terms of Income, Health, Nutrition, Sanitation and Education.

#### 4.3.2.1 INCOME

Table 4.8 indicates that most (92%) households earned less than 10,000 shs from family members working far a way from home, 4% earned between 10,000 – 39,000 shs and 4% earned between 40,000-69,000 shs. This implies that majority of households earn very minimal extra income as result of usage of village phone.

**Table 4.8: Monthly Income earned from family members far a way from home**

	Frequency	Percent
<10000	107	91.5
10000-39000	5	4.3
40000-69000	5	4.3
<b>Total</b>	117	100.0

*Source: Primary Data*

Table 4.9 indicates that 65% of the households earned between 10,000 to 69,000 shs per month which translates to a bout \$1 per day. This implies that the income levels for the rural households are low.

**Table 4.9: Monthly Income earned excluding extra incomes from family members**

	Frequency	Percent
<10000	21	17.9
10000-39000	38	32.5
40000-69000	38	32.5
70000-99000	7	6.0
100000-129000	7	6.0
>130000	6	5.1
<b>Total</b>	<b>117</b>	<b>100.0</b>

*Source: Primary Data*

#### **4.4 THE RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY, SOCIAL CAPITAL, TRANSACTION COSTS, COMMUNICATION AND ACCESS TO INFORMATION AND LIVING STANDARDS.**

Spearman Rank Correlation Coefficient was used to determine the magnitude of the relationship between usage of telecommunication technology, social capital, transaction costs, communication and access to information and living standards of rural House Holds as shown in the Correlation, Matrix, table 4:10.



**TABLE 4:10:- SPEARMAN RANK ORDER CORRELATION MATRIX.**

	Usage	Communication & access to Information	Transaction Costs	Social Capital	Income	Health	Nutrition	Sanitation	Education	Living Standards
Usage	1.000									
Communication & Access to information	.465**	1.000								
Transaction Costs	.549**	.469**	1.000							
Social Capital	.744**	.425**	.640**	1.000						
Income	.053	-.023	-.050	-.007	1.000					
Health	.313**	.112	.252**	.289**	.141	1.000				
Nutrition	.231*	.345**	.051	.238**	.016	.038	1.000			
Sanitation	.480**	.403**	.300**	.371**	.042	.227*	.310**	1.000		
Education	.292**	.310**	.204*	.163	.195*	.414**	.204*	.371**	1.000	
Living Standards	.466**	.451**	.307**	.387**	.356**	.590**	.518**	.703**	.734**	1.000

*Source: Primary Data*

\*\* . Correlation is significant at the .01 level (2-tailed).

\* . Correlation is significant at the .05 level (2-tailed).

#### **4.4.1 THE RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND COMMUNICATION & ACCESS TO INFORMATION (Objective 1).**

There was a significant moderate positive relationship between usage of Telecommunication Technology and Communication & access to information ( $\rho = 0.465$ ,  $p\text{-value} < 0.01$ ). This implied that usage of Telecommunication Technology improved on the Communication and access to information of rural House Holds as shown in the table 4:10 above.

#### **4.4.2 THE RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND SOCIAL CAPITAL (Objective 2)**

There was a significant positive relationship between usage of Telecommunication Technology and social capital. ( $\rho = 0.744$ ,  $p\text{-value} < 0.01$ ). This implies that usage of Telecommunication Technology improved on the social capital of the rural House Holds as shown in the table 4:10.

#### **4.4.3 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND TRANSACTION COSTS. (Objective 3)**

There was a significant Moderate Positive relationship between usage of Telecommunication Technology and Transaction Costs ( $\rho = 0.549$ ,  $p\text{-value} <$

0.01). This implied that as the usage of Telecommunication Technology in the rural House Holds increased the transaction costs.

#### **4.4.4 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND LIVING STANDARDS (Objective 4)**

The relationship between usage of Telecommunication Technology and living standards of rural House Holds was Positive as explained by the following statements which were derived from Table 4:10 above ( $\rho = 0.466$ ,  $p\text{-value} < 0.01$ ). This implied as the usage of Telecommunication Technology increased, the living standards of rural House Holds improved.

##### **4.4.4.1 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND INCOME. (Objective 4)**

There was a weak positive relationship between the usage of Telecommunication Technology and Income of rural House Holds ( $\rho = 0.053$ ,  $p\text{-value} > 0.05$ ). This implied that usage of Telecommunication Technology did not strongly improve on rural House Holds Incomes.

##### **4.4.4.2 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND HEALTH (Objective 4).**

There was a significant positive relationship between the usage of Telecommunication Technology and health of rural House Holds ( $\rho = 0.313$ ,  $p\text{-}$

value < 0.01). This implied that the usage of Telecommunication Technology improved on the health of rural House Holds.

#### **4.4.4.3 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND NUTRITION OF RURAL HOUSE HOLDS. (Objective 4).**

There was a significant positive relationship between usage of Telecommunication Technology and Nutrition of rural House Holds ( $\rho = 0.231$ ,  $p\text{-value} < 0.05$ ). This implied that the usage of Telecommunication Technology by rural House Holds improved on their Nutritional values, as shown in table 4:10

#### **4.4.4.4 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND SANITATION OF RURAL HOUSE HOLDS (Objective 4).**

There was a significant Moderate Positive relationship between usage of Telecommunication Technology and Sanitation issues of Rural House Holds ( $\rho = 0.480$ ,  $p\text{-value} < 0.01$ ). This implied that usage of Telecommunication Technology improved on the Sanitation aspects of the rural House Holds as shown in the table 4:10.

#### **4.4.4.5 RELATIONSHIP BETWEEN USAGE OF TELECOMMUNICATION TECHNOLOGY AND EDUCATION IN RURAL HOUSEHOLDS**

##### **(Objective 4).**

Results in table 4:10 above indicate a significant positive relationship between usage of Telecommunication Technology and education ( $\rho = 0.292$ ,  $p\text{-value} < 0.01$ ). This implied that usage of Telecommunication Technology enhanced on the education issues of the rural House Holds.

#### **4.4.4.6 RELATIONSHIP BETWEEN COMMUNICATION & ACCESS, TRANSACTION COSTS, SOCIAL CAPITAL, AND LIVING STANDARDS.**

There was a significant positive relationship between Communication & Access to information and living standards ( $\rho = 0.451$ ,  $p\text{-value} < 0.01$ ).

There was a significant positive relationship between Transaction costs and living standards ( $\rho = 0.307$ ,  $p\text{-value} < 0.01$ ). There was a significant positive relationship between transaction costs and social capital. Small Money injected in making calls led to increased social capital. There was negative relationship between transaction costs and income. The small increase in money spent on making calls reduced on the income of households. There was a significant positive relationship between transaction costs and health. Health of households improved as a result of low increase in transaction costs. There was positive relationship between transaction costs and sanitation, education and nutrition. A small increase in transaction costs led to improved sanitation, education and nutrition levels.

There was a significant positive relationship between social capital and living standards ( $\rho = 0.387$ ,  $p\text{-value} < 0.01$ )

## **CHAPTER FIVE**

### **DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.0 Introduction**

In this Chapter, conclusion and recommendations are put across. Conclusions are based on findings. The recommendations based on the literature reviewed are to show the need for the increase in usage levels of telecommunication technology and its positive effects on rural households in education, income among many others.

#### **5.1 Discussion**

##### **5.1.1 Objective 1: To establish the relationship between usage of T.T and Communication and access to information.**

There was a significant positive correlation between usage of TT and communication and access to information. Increased usage of village phones has an effect on communication and access to information. Village phones usage improves communication and access to information which improve marketability of agricultural and other produce. This is inline with HDR (2005) whose findings indicated that TT positively affect rural incomes and living standards reducing poverty, enhancing Education, Health , Sanitation and Nutrition.

Inspite of this telephone usage is still moderate as only 48.7% of the respondents use it a whole 25.6% do not use it at all.

**5.1.2 Objectives 2: To establish the relationship between usage of T.T and social capital.**

TT usage and social capital showed a strong positive condition.

Village phones usage make communication and information dissemination easy such that resident's voluntary cooperation for the common good (social capital) is enhanced as they will know where and when to cooperate for this purpose. This will enhance individual's ability to work together to provide for themselves in projects like maintaining water facilities, schools and road maintenance.

In spite of this the people of Nakaseke still need to learn to work together to protect their roads, walls and schools. Social capital entails working together for the common good of society. This has to be improved upon.

**5.1.3 Objective 3: To establish the relationship between usage of TT and transaction costs.**

Village phones usage make communication timely and easy. Access to information increased through the use of the phone (Village) which reduces the need to store big inventories for they can be procured when and where necessary and reduce on transportation costs because where travel was necessary to obtain the information; it is availed through the wireless system.



#### **5.1.4 Objective 4: To establish the relationship between usage of TT and living standards.**

Usage of TT and living standards showed a strong positive relationship. The more the use of telecommunication technology the better the living standards.

Increased usage of village phones has a positive effect on rural income, health, nutrition, sanitation and education. These factors influence greatly the living standards of rural Households. Where and when rural incomes improve, health, nutrition improve with a positive contribution to living standards. This brings about social and economic development of rural areas. Despite this living standards were still low incomes are poor health is still wanting, sanitation, nutrition levels as well as education are still low.

## **5.2 Conclusions**

Usage of village phone as TT improved the communication and access to information, social capital, income, health, sanitation, nutrition and education of rural house holds. The usage of village phone moderately increased the transaction costs which translated into improved living standards.

The living standards in Nakaseke district are low as exhibited by the low correlation coefficients.

### **5.3 Recommendations**

The District should attract investors from allover the world to come and avail the community with increased reliable and affordable village phones. This will increase the usage of TT which will increase communication and access to information. The result will be transforming society and increases in living standards.

The rural households should be encouraged to use TT more frequently for this leads to lowering transportation costs. Storage costs of inventories will also go down.

Increased usage of telecommunication technology, will raise incomes, which is turn will affect education levels. Sanitation will be improved and so will be heath. The rural households will enjoy a better standard of living as result of increased usage of TT.

### **5.4 AREAS OF FURTHER RESEARCH.**

Similar research with same variables can be carried out in other districts for comparison purposes.

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