

IMPACT OF POVERTY ON ECOMMERCE  
DEVELOPMENT AND ADOPTION  
A CASE STUDY AT NYAUDENGE BEACH

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ABSTRACT

Ecommerce (e-commerce) or electronic commerce is the purchasing, selling, and exchanging of goods and services over computer networks (such as the Internet) through which transactions or terms of sale are performed electronically. Ecommerce can be placed in several categories based on the parties involved in the transaction such as business to business or consumer to business. Use of technology that enables buyers to purchase or sellers to access business market globally by use of internet that poses challenges to people with low income. While ecommerce poses variety of challenges and problems ranging from lack of infrastructure, lack of ICT knowledge and skill, policies and laws to security concern, the study in this research concentrated on the impact of poverty on ecommerce. Poverty contributes to high rate of school dropouts and denies most young people a chance to be educated and acquire ICT skills. Most of those who drop out of school due to lack of school fees and early pregnancies for girls affected go to the lake to fish and to be involved in small business activities at the beach respectively. This group cannot afford to own a computer, train in ICT related fields and have no access to internet. On the other hand the little amount they get from the catch and small beach activities they claim is only for survival but not for saving or use in investments. Although poverty denies this group so many things in life, we detected that the low income group especially the ones at the beach use a lot of some ecommerce services through mobile phones and as such contribute much to ecommerce adoption.

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## INTRODUCTION

Electronic commerce is a set of technologies, applications, and business processes that link business, consumers, communities, Governments, Private and public institutions for buying, selling, and delivering products and services over the internet. Ecommerce has advantages offered by technology that enables purchasers and sellers to reach their vendors at any part of the world without barrier. Those who enjoy the use of technology to transact over the internet basically require computers, knowledge and skills in ICT and access connection to internet. We found that poverty denies most people an opportunity to be educated, to be trained and to benefit from the use of technology. Lack of infrastructure in urban areas and rural areas, people being unable to afford computers and the cost to connect to internet are attributed to high poverty level in the country and especially in yimbo that results with many going to the lake to do fishing. Nyaudenge and Oele beaches are in Nyamonye sub location Yimbo North Location, Usigu Division of Bondo District. Yimbo is about seventy seven kilometers away from Kisumu City using KIsumu Usenge Road and about fifteen kilometers from Bondo town. Yimbo is sandwiched between river Yala and lake Victoria and from lake Vitoria somebody can sail to Kisumu, Tanzania and Uganda. From yimbo one can sail to Mageta Island where our founding father the late Mzee Jomo Kenyatta was taken at one time during the struggle for Kenyas independence in late 1950's. From yimbo one can sail to the famous island Mgingo which is known for high production of tilapia fish, the reason for struggle for ownership between Kenya and Uganda Government.

The economic activities in the 1970's was cotton farming, fishing and maize farming along river yala swamp. These have since changed with no more farming of cotton since the Rivertex factory in Kisumu was closed down several years ago. Currently a larger percentage of farming along river Yala is done by Dominion that uses the swamp for maize, rice and other crops for economic activities with a smaller percentage done by individuals for a living. Sugar cane is also grown by individuals for local consumption in Yimbo and other areas such as Alego and Sakwa.

Research established that the main economic activity in Yimbo and other areas along lake Victoria is fishing. Fish from lake Victoria is used for local consumption in the area and export to other areas including city of Kisumu and Nairobi City the Capital of Kenya.

People involved in the business are consumer to consumer (C2C), individuals buying from individuals, Business to Consumers (B2C) business buying from individuals or Consumer to Business (C2B), Individuals selling to business, Business to Business (B2B), business selling to business. The research established that there are societies, individuals who are financially stable who are involved in fishing activities but, majority are the individuals who are considered to be falling in low income group category. There are those people who are engaged in fishing so that they can be given something to take home, there are those who do fishing to sell for survival and there are business brokers who buy to resell to other sellers at the beach. That means they take all fish from fishermen then all buyers buy from them. In some developed countries technology has been used such as sensors in fishing but this involves proper training. It is reported that sensors technology has reached a peak in development and it is doubted whether any increased benefits will be found in the future (Banks, 2001).

## ACRONYMS

- **B2B (Business-to-Business)**  
Companies doing business with each other such as manufacturers selling to distributors and wholesalers selling to retailers.
- **B2C (Business-to-Consumer)**  
Businesses selling to the general public typically through catalogs utilizing shopping cart software
- **C2B (Consumer-to-Business)**  
A consumer posts his project with a set budget online and within hours companies review the consumer's requirements and bid on the project. The consumer reviews the bids and selects the company that will complete the project.
- **C2C (Consumer-to-Consumer)**  
There are many sites offering free classifieds, auctions, and forums where individuals can buy and sell thanks to online payment systems like PayPal where people can send and receive money online with ease. eBay's auction service is a great example of where person-to-person transactions take place everyday since 1995.
- **FAO** Food and Agriculture Organisation of the United Nations ([www.fao.org](http://www.fao.org))
- **ICT** -Information and Communication Technologies
- **OECD** Organisation of Economic Co-operation and Development ([www.oecd.org](http://www.oecd.org))

The people at the beach use some technologies to facilitate various activities they are involved in and in so doing they promote adoption of ecommerce through the use of mobile phones.

Research identified high poverty level as one of the major contributing factors that affects ecommerce development and adoption at almost all levels. "Impact of poverty on ecommerce development and adoption", A case study done at Nyaudenge Beach and Oele Beach, Nyamonye Sub location Yimbo Division of Bondo District. Nyaudenge and Oele were selected for this study to find out why there are so many young people engaged in Fishing and likewise most school going age group engaged in small business activities at these beaches and their participation in ecommerce adoption. The study revealed that most fishermen are school dropouts because of lack of school fees. Most ladies either drop out as a result of early pregnancies or lack of school fees and as such they end up at the beaches to be involved in small business activities for survival.

The study also revealed that this group is engaged in promoting some ecommerce activities and services without knowing. Most of these people have no Bank Accounts but, use mobile phones for money banking and money transfer through the services offered by Safaricom M-Pesa. They reason out that banks are not available for them and even if they were there, they would not use

them since they can not afford. The problem is that there is no infrastructure to make it possible for them to participate in other ecommerce activities. There are no cyber cafes for internet and email within their reach. The analysis of the comparison table for use of technology at Nyaudenge and Oele beaches is shown on Table 1

## OBJECTIVES

Effects of poverty on education and access to ICT skills

Effects of poverty on technology

Poverty challenges on ecommerce

Promotion of ecommerce by low income group

## CHAPTER THREE: METHODOLOGY

In this study we conducted an empirical study of people involved in fishing and other small business activities at the two beaches. The study covered information on age, level of education, activity involved in at the beach, use of any technology such as mobile phones and internet.

### Research Method

Exploratory research was found to be suitable for research design, data collection, and selection method. An explorative investigation is appropriate when a research problem is unstructured and difficult to delimit according to (Eriksson & Wiedersheim, 1997).

The research purpose and question applied here can be described as both exploratory and confirmatory but largely confirmatory, since we aimed to find out effects of poverty on education, ICT training and use of technology in promoting ecommerce adoption by low income group as shown in Fig.2 Bar chart and percentage comparison on Fig 3

### Research Approach

#### Triangulation approach

Data was collected and analyzed by means of survey questionnaires, semi-structured interview, (triangulation approach). Triangulation was chosen because it offers the use of different research techniques giving many advantages. Denzin (1970), for example, suggested that the use of triangulation approach offers greater validity and reliability than a single methodological approach. Dixon et al. (1988) state that most hypotheses and research objectives can be researched using more than one technique of data collection; providing detailed data about the phenomenon being investigated.

**Data collection and procedures**

People involved in fishing and those involved in small business activities at the beaches were approached individually and asked to participate in the research.

Data was collected by means of survey questionnaires and semi-structured interview.

**Questionnaire preparation**

The questionnaire was prepared in stages. First, an initial pool of items was generated following the method of Molla & Licker (2005), the items were reviewed and edited to capture the essence of the concepts and constructs and a preliminary questionnaire was obtained .

**Survey questionnaires**

Questionnaires are appropriate for gathering the views of a large number of people about a particular phenomenon (Stroh, 2000). Questionnaires were used to gain general picture of impact of poverty on education, ICT training and use technology to promote ecommerce adoption. Interviews were conducted at the beaches. A general list was generated at first for general interview conducted.

The questionnaires consisted of questions that were related to possible factors affecting ecommerce adoption and use of technology in general as a result of poverty. Like five point scales ranging from ‘strongly agree’ to ‘strongly disagree’ are used as a basis of questions. This scale has been used in previous ecommerce adoption research according to (Molla & Licker, 2005). The questions were categorized according to the factors expected to be the major contributors of challenges and problems facing ecommerce adoption and general use of technology as a result of poverty.

Benefits were assessed on a five-item scale based on the survey questionnaire of Thong (1999) who investigated IS adoption in small businesses. The questions measured understanding of the benefits and application of ecommerce by fishermen and business people at the beaches.

**QUESTIONNAIRE**

Sample questionnaire is shown here below

**E-commerce evaluation**

Please evaluate the following statements by placing a tick where appropriate	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I use mobile phone for most of my communication	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I contact my customers through mobile phones and email	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most publishers have not developed full ecommerce	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

systems					
Most Bookshops have no email and internet connection					
Major customers to booksellers are schools and most of them have no electricity					
The level of computer literacy is very high both in towns and rural areas					
Most people do not understand benefit of using computers to buy and sell products					

Fig 1: Ecommerce evaluation

**ANALYSIS**

**Data Analysis**

Discriminant function analysis and Independent samples test were used where applicable to analyze data in this research. Analysis details were coded as shown below.

**ITEM DETAILS**

UM	I use mobile phone for most of my communication
CM	I contact my customers through mobile phones and they also contact me through mobile phones
BM	I do not keep my money in a bank account although banks are many in the area
BU	I do not keep my money in a bank account banks because I can not afford
PM	I inform my customer of fish prices and they pay me by M-Pesa
MT	Banking money in M-Pesa and making payment is easier and affordable
BN	I can use bank accounts if they are available and reachable

CODED DETAILS

	FREQUENCY	
	Nyaudenge	Oele
Use of mobile =UM	45	39
Contact to others through Mobile = CM	48	41
Banks Many but I don't use them =BM	0	0
Banks are affordable =BU	0	0
I pay and Receive paymeny through mobile =PM	47	42
Mobile transaction affordable = MT	48	36
Banks not available for use but I would use them=BN	0	0

TABLE 1: Use of technology at Nyaudenge and Oele beaches

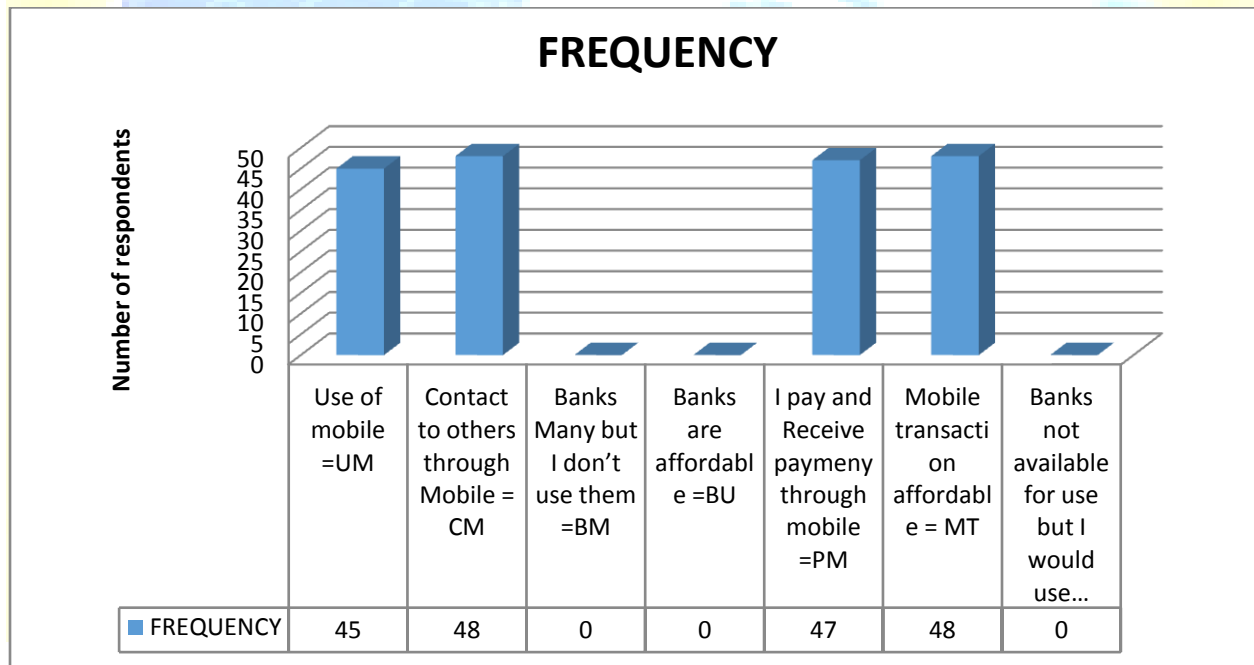


Fig 2: Use of mobile phone by low income group at Oele and Nyaudenge Beaches in Nyamonye Sub location

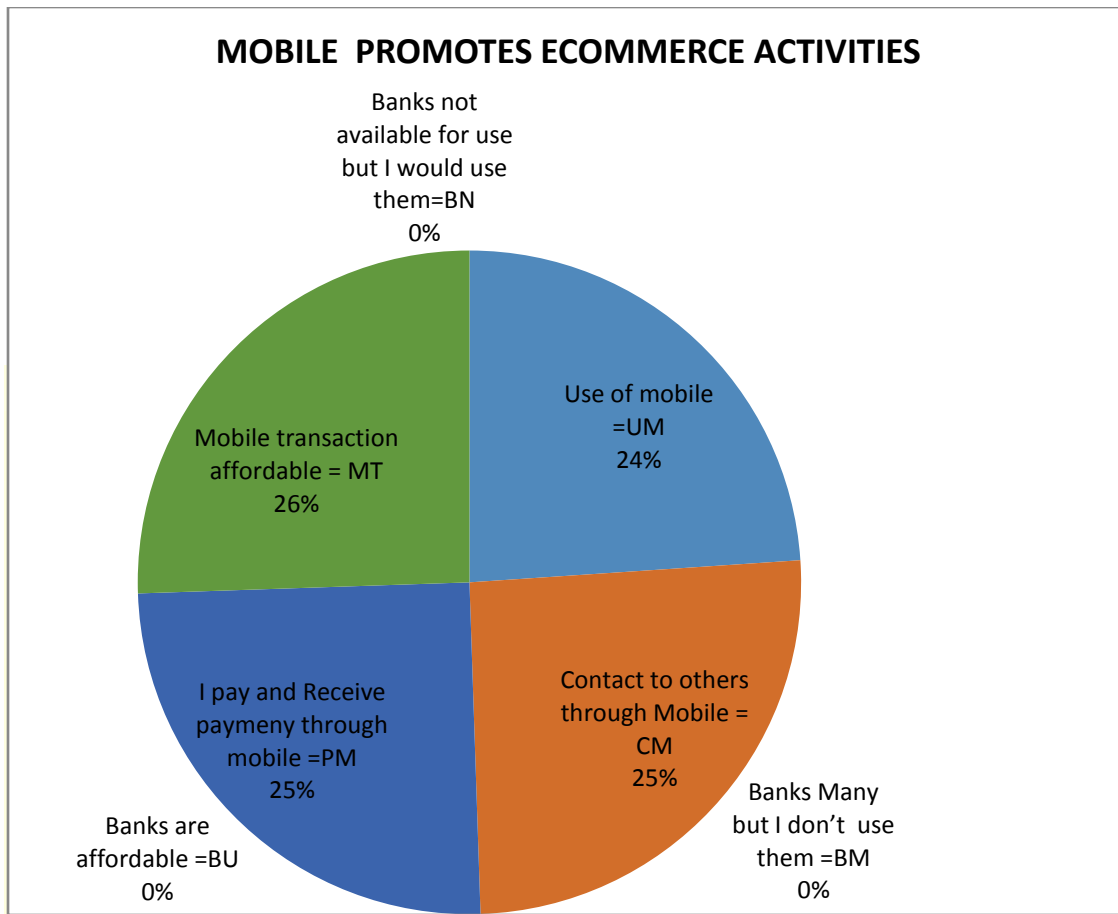


Fig 3: Promotion of ecommerce use by mobile phones at the beach shown as percentage



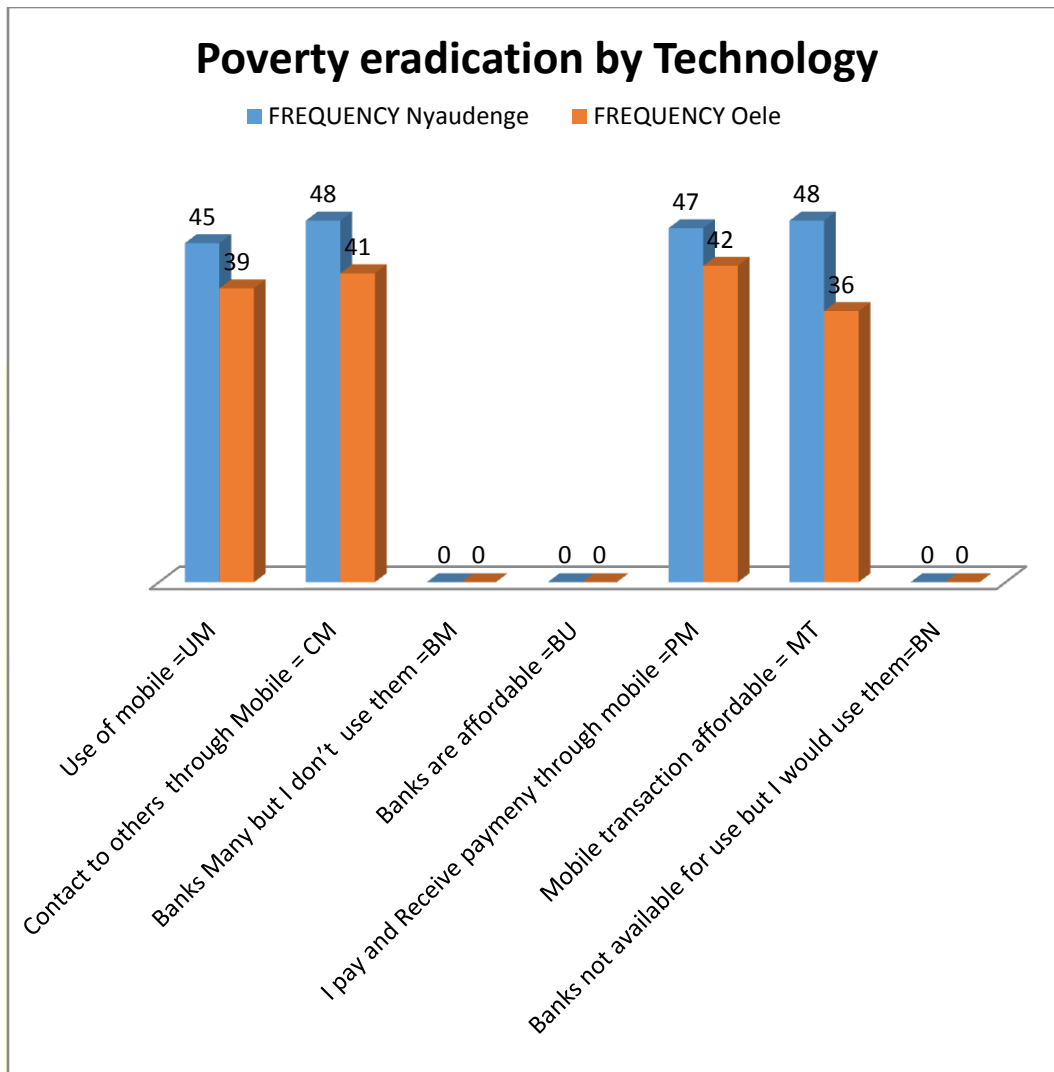


Fig 4: Use of technology comparision at Nyaudenge and Oele beaches in Yimbo

## FINDINGS

Majority of people involved in fishing activities at both Nyaudenge and Oele are young people comprising school leavers and school drop outs. Business activities at these beaches are carried out mainly by ladies some of whom are school drop outs due to early pregnancies. It is true that poverty level in the area is so high. The research confirmed that those involved in fishing and business activities at the beaches come from low income group. The low income status of these people results in high use of technology that promotes adoption of ecommerce. There are only few studies available which provide an analysis of how technology has impacted on the fishing industry. One research, The impact of technological progress on fishing effort (Banks, 2001)

## TECHNOLOGY IS THE DRIVER TO ACHIEVE SUCCESS IN FISHING INDUSTRY

In Developed Countries fishing is not done by low income group as identified in this research but, is a profession where proper training is done to facilitate communication (Conseil Économique et Social Européen, Brussels, 2002b), Technology as a tool for progress, Banks, R. et al., The impact of technological progress on fishing effort, The Hague, Agricultural Economics Research Institute (LEI), 2001. Ecommerce study was carried out in UK to find ways of improving fisheries activities (Brown, G., UK fisheries ecommerce study, London, Department for Environment, Food and Rural Affairs (DEFRA), 2001). Developed countries such as European Union make treaties (European treaty of Rome, 1957) and policies are put in place for fisheries (Irish Sea Fisheries Board, Common Fisheries Policy, Dublin, 2000), FAO prepared code of conduct for responsible fisheries (FAO, Code of conduct for responsible fisheries, Rome, FAO, 2002) and review of fisheries in OECD countries (OECD, Review of fisheries in OECD countries, Paris, 2001) confirm serious efforts made to improve activities in fishing industry in Developed countries.

## POVERTY

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### INTERPRETATION AND RECOMMENDATION

Lack of knowledge and skills among citizens deny them a chance to participate in internet activities that offer many advantages such as communication through emails. Introduction of computer subjects from lower level of learning to tertiary learning institutions is one way to solve digital literacy problem. Government should partner with Non Governmental organizations to support projects aimed at achieving this. Low income group has major participation in ecommerce adoption by using mobile phone technology. Fishery is a serious profession in developed countries and technology is used to facilitate various business activities in fishing industry.

### CONCLUSION

The research identified that people who can not afford to use Bank services can easily use money banking and money transfer through mobile phones. Low income group are the main users of these services especially in Kenya since the financially stable category use both banks and mobile but, their concentration is on banks.

In this way low income group also facilitate adoption of some ecommerce services such as money transfer and money banking by use of mobile phones. It has also been revealed that boarder boarder operators now use mobile phones to reach their clients and on the other hand their clients also reach them to book and make payment through M-Pesa.

Ecommerce relies on some technology infrastructures which are relatively expensive for many developing countries and they have unfavorable economic conditions that deprive them an opportunity to be involved in fast ecommerce development. Among the most pressing are economic conditions, educational systems, payment systems for enabling transfer of funds, and distribution systems for physical transfer of goods.

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